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## Jeoloji Panorama

Jeoloji Panarama'nın bu sayısında "Dünya Penyoüderinde" CD-tarama sayfalarında "Minerallerin Çevre Kirliliğine Etkisi ve Yeraltısını Kirlenmesi" alt başlıkları altında. "Çevre Jeolojisi" konusuna ait önemli bazı makaleler araştırmacılar sunulmaktadır. özetler/Abstracts bölümünde 1996 ve 1997 yılları içinde- yurtdışında önemli dergilerde yayınlanmış Türkiye Jeolojisi ile ilgili 4 makaleye yer verilmiştir. Sempozyum/Seminer/Ronferans bölümünde 1996-1997 yıllarında TMMOB Jeoloji. Mühendisleri Odası tarafından düzenlenen "1. Ulusal Kırmataş Sempozyumu '96" "Su ve Çevre Sempozyumu '97" ve "GEOENV '97 Çevre Sempozyumu"nda yer alan. konu başlıklarına yer verilmektedir. Ayrıca aynı bölümde 1998 yılında yapılacak olan. bazı sempozyumlar hakkında duyurular yer almaktadır. Yeni Yayınlar/Kitaplar bölümünde 1997 yılında Türkiye'de yayınlanmış kitap tanıtımları okurlarımıza sunulmaktadır. Türkiye'deki jeolojik araştırmalara ve okurlarımıza katkı sağlıyacağımıza inandığımız "Jeoloji Panorama" sizlerin görüş ve eleştirilerinizi beklemektedir.

Not: "Jeoloji Panorama" ile ilgili görüş ve düşüncelerinizi ve yayınlanmasını istediğiniz konuları aşağıdaki, e-mail adresine yazabilirsiniz.

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## ÇEVRE. JEOLJİSİ

(Mineral Kirliliği ve Yeraltı Suyu. Kirliliği)  
(1983-1993 GEOREF CD-taraması)

Hazırlayanlar: Engin Öncü Sümer ve Mine Sümer

Kısaltmalar:

TI = **Başlık**

AU = **Yazar(lar)**

OS = **Yayınlandığı yer, cilt, sayfa**

AB = **Yayının özeti**

YR = **Yayınlandığı yıl**

LA = **Yayının yazıldığı dil**

DE = **Yayın anahtar sözcükleri**

TI: Retention of **acetone** and **acrylonitrile** on clays.

AU: Zhang-Z-Z; Sparks-D-L; Scrivner-N-C

SO: American-Geophysical-Union, 72. (17). p. 110 YR: 1991

DE: geochemistry-; processes-; sorption-; waste-disposal; injection-; hazardous-waste; experimental-studies; clay-minerals; sheet-silicates; silicates-; acetone; acrylonitrile-; underground-storage

TI: Mapping subsurface: organic compounds **noninvasively** by their **reactions** with clays.

AU: Gilhoft-G-R; King-T-V-V

SO: Open-File-Report-U.-S.-Geological-Survey. p. 104 YR: 1991

DE: organic-materials; analysis-; polymerization-; Calcasieu-Paiish-LoElsiana; USGS-; waste-disposal; pollution-; hazardous-waste; montmorillonite-; clay-minerals; sheet-silicates; silicates-; experimental-studies; Louisiana-; Southern-U.S.; United-States; southwestern-Louisiana; ion-exchange; toluene-; aromatic-hydrocarbons; hydrocarbons-

TI: Preliminary **interpretation** of geophysical logs and **in situ** hydrologic properties in fractured **limestone** at **Loring** Air Force Base.

AU: Dearborn-L-L; Baker-P-S; Davis-I-B

SO: 'Geotechnical.-and-Groundwater-Applications.S. p.595-622. YR: 1989

DE: Maine-; engineering-geology; waste-disposal; seepage-; hazardous-waste; well-logging; electrical-logging; resistivity-; Limestone-County-Maine; New-England' Eastern-U.S., United-States\* limestone-; carbonate-rocks; interpretation-; boreholes-; migration-; Loring-Air-Force-Base; in-situ

TI: Log evaluation required for permitting of a Class I hazardous waste injection well; a case history.

AU: Lowe-D-J

SO: Geophysics - for - Minerals, - Geotechnical, - and - Groundwater - Applications. 3. p. 261-268. YR: 1989

DE: Alaska-; engineering-geology; waste-disposal; well-logging; seismic-logging; applications-; Western-U.S.; United-States; hazardous-waste; case-studies; Endicott-Field; fluid-injection; techniques -

TI: Stabilizing compacted clay against chemical attack.

AU: Broderick-Gregory-P; Daniel-David-E

SO: Journal-of-Geotechnical-Engineering. 116. (10). p. 1549-1569 YR: 1990

AB: Large increases in the hydraulic conductivity of compacted clay have been shown to be caused by concentrated organic chemicals. Mechanical and chemical methods of stabilizing four different types of compacted clay against chemical attack are investigated. Mechanical stabilization using a large compactive effort (modified Proctor compaction) or application of a compressive stress >10 psi (70 kPa) is found to render a compacted clay invulnerable to attack by concentrated organic chemicals under laboratory-test conditions. Attapulgite, a clay mineral having little electrical charge, was found to be relatively unaffected (compared to more common clay minerals such as kaolinite, illite and smectite) by concentrated organic chemicals. Addition of approximately 7 percent (by weight) of lime, portland cement, or lime plus sodium silicate greatly improved the ability of compacted clay to resist attack by concentrated organic chemicals; in some cases the amended soils were less permeable to concentrated organic chemicals than the unamended soils were to water. Modified journal abstract.

DE: soil-mechanics; methods-" stabilization-; waste-disposal: seepage- • soil-liners; geochemistry-; clay-; clastic-sediments; hydraulic-conductivity; clay-liners; compaction-; hazardous-waste; lime-; sodium-silicate; organic-materials; kaolinite-; clay-minerals; sheet-silicates; silicates-; illite-

TI: Hydrologic **hydrochemical** characterization of Texas **Frio** Formation used for deep-well **injection** of chemical wastes.

- AU: Kreitler-Charles-W; Akhter-M-Saleem; Donnelly-Andrew-C-A  
 SO: Environmental-Geology-and-Water-Sciences. 16, (2), p, 107=120,  
 YR: 1990  
 DE: Texas-; environmental-geology; waste-disposal; Gulf-Coastal-  
 Plain; oxygen-; isotopes-; O-18/0-16; Frio-Formation; Southwestern-  
 U.S.; United-States; North-America; hydrochemistry-; East-Texas;  
 southeastern-Texas; hazardous-waste; brines-; fluid-injection; biodé-  
 gradation-; liquid-waste; Tertiary-; stable-isotopes; illite-; clay-minerals;  
 sheet-silicates; silicates-; calcite-; carbonates-
- TI: Mapping organic contamination by detection of clay-organic  
 processes.  
 AU: King-Trude-V-V; Olhoeft-Gary-R  
 SO: Anonymous. Proceedings of the conference on Petroleum hydro-  
 carbons and organic chemicals in ground water; prevention, detection  
 and restoration, p. 627-640, YR: 1989  
 DE: pollution-; detection-; contamination-; sheet-silicates; silicates-;  
 hazardous-waste; toluene-; aromatic-hydrocarbons; hydrocarbons-;  
 organic-materials; montmorillonite-; clay-minerals; polymerization-;  
 landfills-; cations-
- TI: Utilizing a borehole geophysical logging program in poorly  
 consolidated sediments for a hazardous waste investigation.  
 AU: Crowder-Robert-E; Brouillard-Lee; Irons-Larry-A  
 SO: Geophysics - for - Minerals, - Geotechnical, - and - Groundwater  
 - Applications. 2. p. 65-97, YR: 1987  
 DE: Colorado geophysical-surveys; well-logging; applications-;  
 waste-disposal; Adams-County »Colorado; unconsolidated-materials;  
 hazardous-waste; Rocky-Mountain-Arsenal; Western-U.S.; United-  
 States; gamma-gamma-methods; self-potential-methods; temperature-  
 logging; radioactivity-; resistivity-; electrical-logging
- TI: Clay basins as especially suitable areas for hazardous waste  
 repositories,  
 AU: Czurda-Kurt-A; Boehler-Ulrike; Wagner-Jean-Frank  
 SO: Chaing Mai Univ., Dep. Geol. Sei., Chaing Mai, Thailand, p. 146-  
 160. YR: 1989  
 DE: West-Germany; engineering-geology; waste-disposal; clay-  
 mineralogy; areal-studies; hazardous-waste; site-exploration; inter-  
 montane-basins; clay-; clastic-sediments; marl-; clastic-rocks; Terti-  
 ary-; Upper-Rhine-Graben; Germany-; Central-Europe; Europe-;  
 Rhine-Graben; Eisenberg-Basin; Wiesloch-Clay; clay-basins; adsorp-  
 tion-; clays-; properties-; refractory-materials; Rupelian-; lower-  
 Oligocene; Oligocène-; Paleogene-; Dammelwald-; sedimentation-;  
 provenance-; Pliocene-; Neogene-; Foraminiferenmergel-; X-ray-  
 diffraction-data; claystone-; kaolinite-; clay-minerals; sheet-silicates;  
 silicates-; illite-; heavy-metals; physicochemical-properties; sorption-;  
 permeability-; diffusion-
- TI: Asbestos schizophrénia,  
 AU: Rutstein-Martin-S  
 SO: Abstracts-with-Programs-Geological-Society-of-America. 20. (1), p, 67  
 YR: 1988  
 DE: minerals-; silicates-; asbestos-; hazardous-materials; medical-  
 geology
- TI\* Talc and tremolite as "asbestos"<sup>11</sup> hazards.  
 AU: Rutstein-Martin-S  
 SO: Abstracts-with-Programs-Geological-Society-of-America, 20. (1).  
 p. 66-67 YR: 1988  
 DE: minerals-; silicates-; physical-properties; tremolite-; clinophi-  
 bole-; amphibole-group; chain-silicates; talc-; sheet-silicates; hazard-  
 ous-materials
- TI: The chemistry of shallow groundwaters in the Murrumbidgee  
 irrigation area, New South Wales.
- AU: Williams-Baden-G; Ward-J-K  
 SO: Australian-Journal-of-Soil-Research. 25. (3). p. 251-261, YR:  
 1987  
 DE: ground-water; surveys-; New-South-Wales; hydrogeology-; Mur-  
 rumbidgee-; Australia; Australasia-; chemical-composition; waterways-;  
 irrigation-; saturation-; calcium-; minerals-; ions-; salt-; evaporites-;  
 chemically-precipitated-rocks; concentration-; geochemistry-; hazardous-  
 materials; infiltration-; water-table; methods-; aquifers-
- TI: Solute transport during unsteady, unsaturated soil water flow;  
 the pulse input,  
 AU: Bond-W-J  
 SO: Australian-Journal-of-Soil-Research. 25. (3). p. 223-241.YR:  
 1987  
 DE: soils-; water-regimes; dissolved-materials; pollution-; ground-  
 water; hazardous-materials; solutes-; geochemistry-; flows-; ions-;  
 Clay-soils; infiltration-; tritium-; chlorides-; halides-; minerals-; dis-  
 persion-; surveys-
- TI: A nontoxic substitute for hazardous heavy liquids; aqueous  
 sodium polytungstate (3Na<sub>2</sub>WO<sub>4</sub>·9WO<sub>3</sub>·H<sub>2</sub>O) solution.  
 AU: Gregory-Murray-R; Johnston-Keith-A  
 SO: New-Zealand-Journal-of-Geology-and-Geophysics, 30, (3). p.  
 317-320, YR: 1987  
 DE: geochemistry-; processes-; filtration-; sodium-polytungstate; salt-;  
 evaporites-; chemically-precipitated-rocks; aqueous-solutions; heavy-  
 minerals; halogenated-hydrocarbons; tetrabromoethane-; bromoform-;  
 separation-
- TI: Clay mineral barriers to hazardous waste migration,  
 AU: Warren-Robin-L; Hughes-Randall-E; Chou-Sheng-Fu; Griffin-  
 Robert-A  
 SO: Program-and-Abstracts-Annual-Clay-Minerals-Conference. 24. p.  
 140 YR: 1987  
 DE: Illinois-; environmental-geology; waste-disposal; methods-; sedi-  
 mentary-rocks; clay-; clastic-sediments; liquid-waste; organic-  
 materials; Midwest-; United-States; Wilsonville-; clay-mineralogy
- TI: Environmental impact of mineral transformations undergone  
 during coal combustion«  
 AU: Chinchon-J-S; Querol-X; Fernandez-Turiel-J-L; Lopez-Soler-A  
 SO: Environmental-Geology-and-Water-Sciences. 18. (1). p. 11=15.  
 YR: 1991  
 DE: pollution-; air-; sulfur-; Spain-; environmental-geology; organic-  
 residues; ash-; coal-; X-ray-data; sedimentary-rocks; experimental-  
 studies; Iberian-Peninsula; Southern-Europe; Europe-; Teruel-District;  
 environment-; transformations-; minerals-; anhydrite-; sulfates-; case-  
 studies
- TI: Radioactive waste isolation in arid zones,  
 AU: Nativ-R  
 SO: Ginzburg, D., Shirav, M., The Israeli Association for the Adv-  
 ancement of Mineral Engineering; the Tenth conference. Conference-  
 Israeli-Association-for-the-Advancement-of-Mineral-Engineering 10  
 p, E42 YR: 1990  
 DE: waste-disposal; radioactive-waste; pollution-; ground-water; sur-  
 face-water; unsaturated-zone; water-; water-quality; arid-environment;  
 environment-
- TI: Earth sciences and the environment,  
 AU: Templeman-Kluit-Dirk  
 SO: Canadian-Geophysical-Union-Joint-Annual-Meeting 15 p 129  
 YR: 1990  
 DE: geology-; practice-; planning-; engineering-geology; pollution-;  
 controls-

- TI: Study of two alteration systems as natural analogues for radionuclide release and migration,  
 AU: Ildefonse-Philippe; Muller-Jean-Pierre; Clozel-Blandine; Calas-Georges  
 SO: Wolff, F. C., Cendrero, A, Geology and the environment. Geol. Surv. Norway, Trondheim, Norway. Engineering-Geology, 29. (4). p. 413-439. YR: 1990  
 AB: U-deposit hosted in hydrothermally altered tuffs in Mexico, together with weathering profiles from Cameroon were studied as natural analogues of radionuclide release and migration, Using petrological and spectroscopic methods (infrared and electron paramagnetic resonance), successive secondary mineral parageneses, and the behaviour of radionuclides, were distinguished. It is concluded that paramagnetic defect centres in kaolinites might allow an efficient fingerprint of successive irradiations in the natural analogues under study and could be an useful tool to control radionuclides migration through kaolinite<sup>^</sup> containing clayey materials such as those used for waste repository.- Modified journal abstract.  
 DE: Mexico»; geochemistry-; metasomatism-; Cameroon-; weathering- • processes-; hydrothermal-alteration; waste-disposal; radioactive-waste; pollution-; radioactive-isotopes; clay-mineralogy; experimental-studies; isotopes-; analysis-; uranium-minerals; analog-simulation; transport-; tuff-; pyroclastics-; volcanic-rocks; SEM-data; Chihuahua-; West-Africa; Africa-; latentes-; soils-; kaolinite-; clay-minerals; sheet-silicates; silicates-; EPR-spectra; TEM-data; saprolite-; clastic-rocks
- TI: Bioindication of the environmental pollution of the cities.  
 AU: Revich-B-A; Kiseleva-E-S (Kiseleva, Ye, S.); Moskalenko-N-N  
 SO: Pulkkinen, Eelis, Symposium on Environmental geochemistry in Northern Europe; abstracts. Geol. Surv. Fini, Geochem. Dep., Rovamemi, Finland, p. 45 YR: 1989  
 DE: pollution-; detection-; bioindicators-; geochemistry-; environment-; elements-; ecology-; chemical-composition; toxic-materials; concentration-; human-ecology; substrates-; biology-; biota-; methods-; analysis-; indicators-
- TIi Geochemical mapping as a method of indication of hazardous ecological situations,  
 AU: Burenkov-E-C (Burenkov, E. K.); Smirnova-R-S; Sorokina-E-P  
 DE: ecology-; analysis-; terrestrial-environment; geochemistry-; cartography-; pollution-; environment-; heavy-metals
- TI: Uranium distribution and geology in the Fish Lake surficial uranium deposit, Esmeralda County\* Nevada.  
 AU: Maeke-David-L; Schumann-R-RandaĪĪ; Otton-James-K  
 OS: U. S. Geol. Surv., United-States  
 SO: Geological-Survey-Bulletin-CWashington). 22 p, YR: 1990  
 DE: Nevada-; economic-geology; uranium-ores; uranium-; geochemistry-; sediments-; mineral-exploration; geochemical-methods; trace-elements; mineral-deposits; genesis-; environments Esmeralda-County-Nevada; USGS-; Western-U.S.; United-States; southern- Nevada; Fish-Lake-Deposit; actinides-; metals-; metal-ores; marshes-; pollution-; lake-sediments; geologic-hazards; organic-materials; springs-; ground-water; paludal-environment; mineral-deposits-; genesis; geochemical-controls; hydrogeological-controls; paleogeographic-controls
- TI: Comparison of the mineralogy and geochemistry of the Kerosene Creek Member, Rundle and Stuart oil shale deposits, Queensland, Australia.  
 AU: Patterson-J-H; Henstridge-D-A  
 SO: Chemical-Geology, 82. (3-4). p. 319-339. YR: 1990  
 DE: Queensland-; geochemistry-; trace-elements; economic-geology; oil-shale; sedimentary-rocks; organic-residues; sedimentation-; environment-; lacustrine-environment; Australia-; Australasia-; Rundle-Formation; Stuart-Formation; Kerosene-Creek-Member; major-elements; mineral-composition; pollutions beneficiation-; Tertiary-; statistical-analysis
- TI: Mineral sand mining and its effect on groundwater quality,  
 AU: Viswanathan-M-N  
 SO: Water-Science-and-Technology. 22. (6). p. 95400. YR: 1990  
 DE: New-South-Wales; environmental-geology; pollution-; ground-water; surveys-; water-quality; aquifers-; iron-; metals-; sulfates-; water-treatment; unconfined-aquifers; Tomago-sandbeds; Australia-; Australasia-; biodégradation-; sands-; solution-mining; coastal-environment; environment-
- TIĪ Natural radioactivity of fresh waters in Slovenia, Yugoslavia.  
 AU: Kobal-Ivan; Vaupotic-J; Mitic-D; Kristan-i-J; Ancik-M; Jerancic-S; Skofljanec-M  
 SO: Environment-International, 16. (2). p. 141-154. YR: 1990  
 DE: Yugoslavia-; environmental-geology; pollution-; radon-; isotopes-; Rn-222; radium-; Ra-226; water-; radioactive-isotopes; ground-water; surveys-; hydrology-; Southern-Europe; Europe-; Slovenia-; radioactivity-; geochemistry-; noble-gases; alkaline-earth-metals; metals-; uranium-; actinides-; surface-water; uranium-ores; metal-ores; phosphate-rocks; chemically-precipitated-rocks; radioactive-waste; thermal-waters; mineral-waters
- TI: Microbially mediated fixation of uranium, sulfur, and iron in a peat-forming montane wetland, Larimer County\* Colorado,  
 AU; Robbins-Eleanora-I; Zielinski-R-A; Otton-James-K; Owen-D-E; Schumann-R-R; McKee-J-P  
 SO: Geological-Survey-Circular, p. 70-71 YR: 1990  
 DE: Colorado-; geochemistry-; trace-elements; Larimer-County-Colorado; USGS-; Westem-U.S.; United-States; north-central-Colorado; Rocky-Mountains; North-America; biogenic-effects; bacteria-; uranium-; actinides-; metals-; sulfur-; iron-; peat-; organic-residues; wetlands-; coal-; pollution-; pH-; mountains-; paludal-environment; environment-
- TI: Natural and man-made anomalies of heavy metals in soils of Finland,  
 AU: Kauranne-L-K  
 SO: Hydrogeol. and Eng. Geol., Moscow, USSR. p. 161-208. YR: 1989  
 DE: Finland-; environmental-geology; pollution-; soils-; surveys-; ground-water; geochemistry-; metals-; sediments-; clastic-sediments; drift-; mining-geology; effects-; Scandinavia-; Western-Europe; Europe-; anomalies-; heavy-metals; mineral-composition; organic-materials; grain-size
- TI: Etude de la pollution métallique (Cd,Cu,Pb,Zn) du littoral atlantique marocain entre Kenitra et Temara.  
 Translated title: Research in metallic pollution (Cd, Cu\* Pb, Zn) in the intertidal environment of the Moroccan Atlantic Coast» between Kenitra and Temara,  
 AU: Mahayoui-M; Saghi-M; Karchaf-I  
 SO: Chemosphere-(Oxford). 18. (7-8). p. 1639-1655.  
 YR: 1989 LA: French LS: English  
 DE: Morocco-; environmental-geology; pollution-; heavy-mineral-deposits; intertidal-environment; environment-; North-Africa; Africa-; Atlantic-Ocean; Kenitra-; Temara-; Moroccan-Atlantic-Coast; analysis-; cadmium-; metals-; biochemistry-; sediments-; marine-sediments; copper-; lead-; zinc-
- TI: Antarctic environment, keeping the South Pole clean,  
 AU: Austin-Penelope  
 SO: Nature-(London). 341. (6238), p. 93 YR: 1989  
 DE: Antarctica-; environmental-geology; conservation-; mineral-exploration; objectives-; Polar-regions; oil-spills; pollution-; international-cooperation

- TI: Scàwermetalle in der Donau im Raum Wien; Eine Vorstudie.  
Translated title: **Heavy** metals in the Danube River in the vicinity of Vienna; a previous **study**.  
AU: Kralik-M; Sager-M  
SO: Nachrichten-DeuCsche-Geologische-Gesellschaft. 33. p. 53-54  
YR: 1985  
DE: hydrology-; surveys-; Austria-; metals-; geochemistry-; clastic-sediments; environmental-geology; pollution-\* organic-materials; sediments-; Danube-River; Vienna-; Central-Europe; Europe-; Lower-Austria; hydrogeology-; heavy-metals • hydrochemistry-" mineral-composition; fluvial-environment; environment-- surface-water
- TI: **Groundwater** contamination incidents in Australia; **an** initial survey.  
AU: Jacobson-G; Lau-J-E  
SO: Report-Buieau-of-Mineral-to 21 p.  
YR: 1988  
DE: Australia-; environmental-geology; pollution-; ground-water; surveys-; Australasia-; pollu.tan.ts-; sewage-; leaching-; Perth-Basin; Gambler-Limestone; aquifers--; water-management-; urban-environment ; environment-; agriculture-; water-quality
- TI: Radon emanations m. surfit<sup>1</sup> i al geologic: deposits of Kenosha. Racine and Waukesha counties In southeastern Wisconsin.  
AU: Kochis-Nancy-S.; Orlovsky-Steven-J; Leavitt-Steven-W  
SO: Abstracts-with-Frogranis^^ 21. (4). p. 18  
YR: 1989  
DE: Wisconsin-; environmental-geology; pollution-; Keno&ha-County-Wisconsin; Racine-County-Wisconsin; Waukesha-County-Wisconsin; Oak-Creek-Formation; Horicon-Fonntation; Midwest-; United-States' southeastern-Wisconsin; radon-; noble-gases; air-; indoor-environment; Kettle-Moraine; Lake-Plain; in-situ; .geochemistry-; mineral-composition; textures-
- TI: Impact of **mineral exploration** on **enviranment** .and tis management  
AU: Nene-S-G; Panja-S-R  
SO: India, Mining, Geological and Metallurgical. Institute., .India. 8 p.  
YR: 1987  
DE: India-; environmental-geology; conservation-; pollution-; risk-assessment; mining-; human-activity; Indian-Peninsula; Asia-
- TI: **India's environment**; problems and perspectives; proceedings of the seminar\*  
AU: Radhakrishna-B-P; Ramachandran-K-K  
SO: Memoir-Geological-Society-of-India. 5. 298 p. YR: 1986  
DE: symposia-; environmental-geology; pollution-; India-; Indian-Peninsula; Asia-; shorelines-; mining-geology; mineral-resources
- TI: .Effect of **mineral sand, mining** on iron **solubility** in a coastal aquifer..  
AU: Viswanathan-M-N  
SO: Univ. Kebangsaan, Selangor, Malaysia, p., F58-F68. YR: 1987  
DE: ground-water; surveys-; New-Sonth-Wales; hydrogeology-; sands-; aquifers-; Newcastle-; Australia-; Australasia-; **rutile-**; oxides-; zircon-; nesosilicates-; orthosilicates-; silicates-; ilmenite-; Tomago-Sandbeds; iron-; mathematical-geology; equations-; water-quality; bacteria-; pollution-; mining-geology; prin.ci.ples-
- TI: The use: of stable isotopes **to determine** the: **source of** brine in Saskatchewan potash mines.  
AU: Wittnip-M-B; Kyser-T-K; Danyluk-T  
SO: Canada... Special-Publication-Saskatchewan-Geologkal-Sociely. 8. p. 159-165, YR: 1986
- DE: Saskatchewan-; economic-geology; potash-; mineral-deposits; genesis-; environment-; oxygen-, isotopes-; 0-18/0-16; hydrogen-; D/H-; deuterium-; geochemistry-" brines-; tracers-; Western-Canada; Canada-; evaporites-; chemically-precipitated-.roc.ks; leakage-anomalies; water-; aquifers-; Mannville-Group; floods-; Devonian-; Prairie-Evaporite-Formation; Cory-Division; Allan-Division; stable-isotopes; hydrogeology-; pollution-- mineral-deposits,-genesis
- TI: **Massenverlagerung** durch **Rohstoffgewinnung** und ihre **umweltgeologischen** Folgen.  
Translated title: Mass displacement by mineral exploitation and its impact on the geologic environment.  
AU: Meyer-D-E  
SO: Zeitschrift-der-Deutschen-Geologischen-Gesellschaft. 137. (1>. p. 177-193. YR: 1986  
DE: conservation-; natural-resources; energy-sources-; raw-materials; exploitation-; production-; mass-balance; dynamics-; erosion-; pollution-; lithosphere-; atmosphere-; hydrosphere-; +-environmental-
- TI: **Interaction of Fe>Ni-metal** with preptan.efca.ry **nebula** gases (**H2O, H2S, CO» CO2**); **physkocbemic**] aspect.  
AU: Mendybaev-R-A (Mendybayev, R. A.); Kuyunko-N-S; Lavrukina-A-K  
SO: Wa&son, John. T. Meteoritical Society, 52nd meeting; abstracts. Meteoritics. 24. (4). p. 303 YR: 1989  
DE: meteorites-; geochemistry-; ordinary-chondrites; chondrites-; stony-meteorites; nickel-; metals-; iron-; solar-nebula-; gases-; effects-; regolith-; breccia-; clastic-rocks; mineral-assemblages-; hydrogen-disulfide; **water-**; carbon-monoxide; carbon-dioxide
- TI: The role of water-rock interaction and fluid evolution In **fonning** the: **porphyry-related Sisson Brook** W-Cu-Mo deposit, New Brunswick.,  
AU: Nast-Heidi-J; Williams-Jones-Anthony-E  
SO: Geology-and-fhe-BulletIn-of-the-Society-of-Economic--Geogiolisls. 86. (2).. p. 302-317. YR: 1991  
DE: New-Brunswick; economic-geology; base-metals; mineral-deposits; genesis-; ore-forming-fluids; paragenesis-; fluid-Inclusions-; geologie-themo.metry; petrography-; Maritime-Provinces; Eastern-Canada-; Canada-; metal-ores; evolution-; porphyry-; igneous-rocks; Sisson-Brook-Deposit; copper-ores; molybdenum-ores; tungsten-ores ; Devonian-; intrusions-;! host-rocks; metagabbro-; metaigneous-rocks; metavolcanic-rocks; metasedimentary-rocks; veins-; disseminated-deposits; hiotitization-; mass-balance; leaching-; temperature-; mineral-deposits,-genesis; mineral-composition; inclusions-; electron-probe-data
- TI: Meteoric **interaction** with, **magmatic discharges** in Japan and the significance for mineralization.  
AU: Hedenquist-Jeffrey-W; Aoki-Masahiro  
SO: Geology-CBoulder). 19, (JO), p. 1041-1044. YR: 1991  
DE: Japan-; hydrogeology-; thermal-waters; volcanology-; volcanoes-;; mineral-deposits; genesis-; metal'-ores; hydrothennal-processes; metals-; geochemistry-; Far-East; Asia-; Kyushu-; Kirishima-; Hokkaido-; Esan-Cape; fumaroles-; hot-springs; springs-; geothermal-systems; meteoric-water; magmas-; gases-; pH-; mineral-deposits,-genesis; epi thermal-processes
- TI: Strontium **isotopes** and **wafer-rock** interaction, of **Agrokipi** **"B"** **stockwork** deposit in the- **Troodos Ophiolite**, Cyprus; **a fossi sabseafloor** ore body.  
AU: Kawahata-Hodaka; Scoft-Steven-D  
SO: Geochemical-Journal. 24. (6). p. 349-356. YR: 1990

DE: Cyprus-; economic-geology; metal-ores; minerals»; sulfidess chemical-composition; strontium-; isotopes-; Sr-87/Sr-86; igneous-rocks; ultramafless ophiolite-; mineral-deposits; genesis»; processes-; hydrothermal-processes; Troodos-Ophiolite; Middle-East; Asia-; Agropkiyas stockwork-deposits; geochemistry-; alkaline-earth-metals; metals-; stable-isotopes; rock«water-ínterface; hydrothermal-alteration; metasomatism-; mineral-deposits,-genesis

TI\* Stable isotope and fluid inclusion studies of W-Sn-Ag deposits, Silver Mine District, southeastern Missouri» tectonic control of water-rock interaction in a magmatic hydrothermal system,  
AU: Shelton-Kevin-L; Lofstron»Doty-M  
SO: Univ. Mo., Dep. GeoL and Geophys.» Rolla, MO, United-States, p. 368-377. YR: 1988

DE: Missouri-; economic-geology; metal-ores; mineral-deposits; genesis-; processes-; hydrothermal-processes; fluid-inclusions; geochemistry-; isotopes-; oxygens 0-18/0-16; hydrogens D/Hs ratios-; deuterium-; Madison-County-Missouri; southeastern-Missouri; stable» isotopes; inclusionss wolframites tungstates-; silver-ores; tin-ores; tungsten-ores; Midwest-; United-States; mineral-deposits,-genesis; Silver-Mine-District; structural-controls

TI: Oxygen isotopic composition of Lower Cretaceous tholeiites and Precambrian basement rocks from the Parana Basin (Brazil); the role of water-rock interaction»

AU: Iacumin-P; Piccirillo-E-M; Longinelli-A  
SO: Chemical-Geology;-fcotope-Geoscience-Section. 86. (3). p. 225-237. YR: 1991

DE: Brazils geochemistry-; isotopes-; oxygen-; 0-18/0-16; igneous-rocks; basalts-; tholeiites metasomatism-; processes»; hydrothermal-alteration; lava-; South-America; Parana-Basin; stable-isotopes; volcanic rocks; Lower-Cretaceous; Cretaceous»; basement-; crystalline-rocks; Precambrians whole-rock; rock-water-interface; wallrock-alteration

TI: Fluid inclusion and stable isotope evidence for interaction between granites and magmatic hydrothermal fluids during formation of disseminated and pipe-style mineralization at the Zaaipia» at tin mine,

AU: Pollard»P-J; Andrew-Anita-S; Taylor-R-G  
SO: Economic-Geology-and-the-Bulletin-of-the-Society-of-Economic-Geologists, 86. (1), p. 121-141. YR: 1991

DE: South-Africa; economic-geology; tin-ores; fluid-inclusions; P-T-conditions; paleosalinitys isotopes-; stable-isotopes; oxygens 0-18/0» 16; hydrogens D/H-; mineral-deposits; genesis-; ore-forming-fluids; deuteriums geochemistry-; Southern-Africa; Africa-; metal-ores; inclusions-; granites»; hydrothermal-processes; mineral-deposits,-genesis; disseminated-deposits; pipes-; intrusions-; Zaaipia»-Mine; host-rocks; Lease-Granite; Bobbejaankop-Granite; Lebowa-Granite-Suite; Bushveld-Complex; rare-earth; metals-; hydrothermal-alteration; metasomatism-; crystallization-; mineral-composition; geologic-thermometry; water-; salt-; evaporites chemically-precipitated» rocks; carbon-dioxide; ore-bodies; ore-grade

TI: A new kinetic approach to modeling water-rock interaction; the role of nucleation, and Ostwald ripening,

AU: Steefel-Carl-I; Van-Cappellen-Philippe  
SO: Geochimica-et-Cosmochimica-Acta. 54. (10). p. 2657-2677. YR: 1990

DE: crystal-growth; sheet-silicates; clay-minerals; nucleations minerals igneous-rocks; granites-; rock-water-interface; geochemistry-; processes»; solution-; models-; kinetics-; dissolved-materials; hydrochemistry-; mineral-assemblages; surface-areas; Ostwald-ripening; weathering-; rainfall-; kaolinite-; silicates-; halloysite-; sheet-silicates,-clay-minerals; secondary-minerals; K-feldspar; alkali-feldspar; feldspar-group; framework-silicates; quantitative-analysis; phase-equilibria; muscovite-; mica-group; gibbsite-; oxides-

TI: The impact of synthetic leachate on the hydraulic conductivity of a smectitic till underlying a landfill near Saskatoon, Saskatchewan.

AU: Yanful-Ernest-K; Haug-Moir-D; Wong-Iionel-C  
SO: Canadian - Geotechnical - Journal- = - Revue - Canadienne - de - Geotechnique. 27, (4). p. 507-519, YR: 1990

AB: A water-moulded till used in the construction of a liner for a landfill was tested for low-gradient triaxial permeability over a 7-month period with six pore volumes of test leachate. At a hydraulic gradient of approximately 100 the hydraulic conductivity was  $3.0 \times 10^{-9}$  cm/s, compared with  $6.0 \times 10^{-9}$  cm/s for the water-permeated sample at the same gradient. The k was also evaluated at gradients of 20 and 50 during water permeation and found to be  $8.0 \times 10^{-9}$  and  $6.8 \times 10^{-9}$  cm/s respectively. The slightly decrease in k with increase in gradient was attributed to a decrease in void ratio, resulting from a net increase in applied effective stress at the outflow end of the specimen. An assessment of the clay mineral composition of the till at the end of permeability testing did not show collapse of the smectite peak. Instead, the leachate appeared to have actually enhanced the smectite peak relative to the illite peak. It was concluded that the leachate did not have any detrimental impact on the till and that the hydraulic conductivity of the 0.3-m-thick liner underlying the landfill may not be expected to increase as a result of interaction with leachate.-Modified journal abstract.

TI: Modeling water-rock interaction in the surficial environment; the role of precursors, nucleation, and Ostwald ripening,

AU: Steefel-Ç-I; Van-Cappellen-Philippe; Nagy-K-L; Lasaga-A-C  
SO: Chemical-Geology. 84. (1-4). p. 322-325. YR: 1990

DE: weathering-; geochemistry-; reactions-; phase-equilibria; crystal-growth; nucleations Ostwald-ripening; halloysite-; clay-minerals; sheet-silicates; silicates»; allophanes kaolinite-; rock-water-interface; thermodynamic-properties; transformations-; theoretical-studies; models-

TI: The composition of weathering solutions on granitic rocks; comparison between field observations and water-rock interaction simulations based on thermodynamic and kinetic laws,

AU: Made-B; Fritz-Bertrand  
SO: Chemical-Geology. 84. (1-4), p. 100404, YR: 1990

DE: weathering-; geochemistrys solution-; thermodynamic-properties; kinetics-; aqueous-solutions; pH-; phase-equilibria;  $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-Na}_2\text{O}$ ; rock-water-interface

TI: Platform limestone-shale basin interaction during diagenesis; an example from the Middle Ordovician of East Tennessee»

AU: Johnson-R-E; Walker-K-R; Amseth-R-W  
SO: Abstracts - Society - of - Economic~Paleontologists-and-Mineralogists» -Annual-Midyear-Meeting. 1986 (Vol. 3). p. 57 YR: 1986

DE: Tennessee-; stratigraphy-; Ordovicians Middle-Ordovician; eastern-Tennessee; Southern-U,S,; United-States; clay-minerals; sheet-silicates; silicates-; limestone-; carbonate-rocks; shales clastic-rocks; diagenesis-; sedimentary-basins; lithofacies-; tectonic-controls; oxides-; pore-water; mineral-composition

TI: The characteristics of fluorine in groundwater of North China and the significance of fluorite-water interaction to fluorine transportation,

AU: Shen-Zhaoli; Zhou-Mi; Tang-Minggao  
SO: uitemational-Symposium-on-Water-Rock-Interaction. 6. p. 801-804. YR: 1989

DE: China-; hydrogeologys ground-water; fluorine-; geochemistry-; surveys-; Far-East; Asia-; Northern-China; halogens»; fluorites fluorides-; halidess rock-water-interface; experimental-studies; theoretical-studies; solubility-; hydrochemistry-

TI: Thermal decompaction of rocks and its effect on permeability,

- AU: Zارايسكى-G-P (Zarayskiy, G. P.); Baiashov-V-N; Zonov-S-V  
 SO: International-Symposium-on-Water-Rock-Interaction. 6. p. 797-800, YR: 1989  
 DE: metamorphism-; interpretation-; compaction-; igneous-rocks; granites-; properties-; elastic-properties; temperature-; permeability-; microcracks-; grain-boundaries; porosity-; percolation-; hydrothermal-conditions; thermal-effects
- TI: Experimental modelling of metasomatic zoning at fluid-rock interaction.  
 AU: Zارايسكى-G-P (Zarayskiy, G. P.)  
 SO: International-Symposium-on-Water-Rock-Interaction, 6, p. 793-796, YR: 1989  
 DE: metasomatism-; experimental-studies; zoning-; models-; geochemistry-; rock-water-interface; interpretation-; brucite-; oxides-; numerical-models; infiltration-
- TI: Experimental study about the activation and migration of gold and silver in volcanic rocks.  
 AU: Liang-Xiangji; Qiao-Li  
 SO: International-Symposium-on-Water-Rock-Interaction, 6, p. 785-788, YR: 1989  
 DE: mineral-deposits; genesis-; interpretations ore-forming-fluids; potassium-; geochemistry-; metal-ores; sodium-; China-; economic-geology; gold-ores; silver-ores; experimental-studies; gold-; metals-; silver-; alkali-metals; volcanic-rocks; mineral-deposits-; genesis-; Far-East; Asia-; cyanides-; thiosulfate-ion; bicarbonate-ion
- TI: Sorptive interactions between organic micropollutants and the mineral fraction of Permo-Triassic sandstone.  
 AU: Williamson-D-J; Lerner-D-L; Astin-M  
 SO: International-Symposium-On-Water-Rock-Interaction. 6, p. 777-779, YR: 1989  
 DE: organic-materials; geochemistry-; pollutants-; soils-; pollution-; analysis-; processes-; sorption-; experimental-studies; continuous-flow-method; adsorption-; Permian-; Triassic-; sandstone-; clastic-rocks; sedimentary-rocks; rock-water-interface; minerals-; isotherms-; tracers-; environmental-geology; methods-
- Th Diverse fluid phases associated with the crystallisation and alteration of lithium pegmatites at Moylisha and Stranakelly\* SE Ireland.  
 AU: Whitworth-Martin-P; Rankin-Andrew-H  
 SO: International-Symposium-on-Water-Rock-Interaction. 6, p. 769-772, YR: 1989  
 DE: Ireland-; economic-geology; lithium-ores; mineral-deposits; genesis-; ore-forming-fluids; oxygen-; isotopes-; 0-18/0-16; lithium-; geochemistry-; pegmatite-; Western-Europe; Europe-; southeastern-Ireland; granites-; lithium-pegmatite; alkali-metals; metals-; crystallization-; Leinster-Granite; metal-ores; stable-isotopes; P-T-conditions; barren-deposits; mineral-deposits-; genesis-; Moylisha-; Stranakelly-; fluid-inclusions; inclusions-
- Til Electron transfer mechanisms associated with the surface dissolution and oxidation of magnetite and ilmenite.  
 AU: White-Art-F; Hochella-Michael-F Jr  
 SO: International-Symposium-on-Water-Rock-Interaction, 6, p. 765-768, YR: 1989  
 DE: geochemistry-; processes-; solution-; ferrous-iron; electrons-; oxidation-; magnetite-; oxides-; ilmenite-; electron-transfer; mineral-water-interface; iron-; metals-; aqueous-solutions; Eh-; experimental-studies; iron-oxides; X-ray-spectra
- TI: Surface structure and mineral dissolution kinetics; a Monte Carlo study.  
 AU: Wehrli-B  
 SO: International-Symposium-on-Water-Rock-Interaction, 6, p. 751-753, YR: 1989  
 DE: crystal-structure; lattice-parameters; phase-equilibria; minerals-; weathering-; chemical-weathering; solution-; kinetics-; geochemistry-; Monte-Carlo-analysis; statistical-analysis; pH-; crystal-chemistry
- TI: The paleohydrogeochemical conditions for the genesis of some sedimentary-reworked siderite deposits in China.  
 AU: Wang-Yanxin; Shen-Zhaoli  
 SO: International-Symposium-on-Water-Rock-Interaction, 6, p. 743-746, YR: 1989  
 DE: China-; economic-geology; iron-ores; mineral-deposits; genesis-; sedimentary-processes; Far-East; Asia-; siderite-; carbonates-; reworking-; metal-ores; mineral-deposits-; genesis-; stratabound-deposits; geochemistry-; ore-forming-fluids; models-
- TI: Electrostatic approach for calculating mineral solubilities and complex formation in supercritical volatile aqueous solutions,  
 AU: Walther-J-V; Schott-J  
 SO: International-Symposium-on-Water-Rock-Interaction. 6, p. 731-733, YR: 1989  
 DE: metamorphism-; theoretical-studies; thermodynamic-properties; geochemistry-; properties-; solubility-; free-energy; volatiles-; electrical-properties; aqueous-solutions; P-T-conditions; dielectric-properties; ions-; rock-water-interface; complexing-
- TI: Dissolution kinetics of calcite in CO<sub>2</sub>-H<sub>2</sub>O systems at 210 degrees C.  
 AU: Talman-S; Wiwchar-B; Gunter-W-D; Scarfe-C-M  
 SO: International-Symposium-on-Water-Rock-Interaction, 6, p. 673-674, YR: 1989  
 DE: phase-equilibria; carbonates-; CO<sub>2</sub>-H<sub>2</sub>O; weathering-; minerals-; calcite-; geochemistry-; processes-; solution-; kinetics-; carbon-dioxide; aqueous-solutions; temperature-; experimental-studies; mineral-water-interface; rates-
- TI: Alteration mineralogy of the Ellidaar geothermal field, Reykjavik, Iceland.  
 AU: Smarason-Omar-Bjarki; Tomasson-Jens; Ganda-Sugiarto  
 SO: International-Symposium-on-Water-Rock-Interaction. 6, p. 643-646, YR: 1989  
 DE: Iceland-; economic-geology; geothermal-energy; metasomatism-; processes-; hydrothermal-alteration; Western-Europe; Europe-; Reykjavik-region; Ellidaar-Field; geothermal-fields; secondary-minerals; laumontite-; zeolite-group; framework-silicates; silicates-; low-temperature; mineral-composition; genesis-; properties-; mineral-water-interface; vugs-; polyphase-processes; chabasite-; thomsonite-; mesolite-; scolesite-; stilbite-; heulandite-; epidote-; epidote-group; sorosilicates-; orthosilicates-; chlorite-; chlorite-group; sheet-silicates
- TI: Kinetics and non-stoichiometry of labradorite dissolution,  
 AU: Sjoberg-Lennart  
 SO: International-Symposium-on-Water-Rock-Interaction, 6, p. 639-642, YR: 1989  
 DE: crystal-chemistry; framework-silicates; plagioclase-; labradorite-; minerals-; phase-equilibria; interpretation-; geochemistry-; processes-; solution-; feldspar-group; silicates-; kinetics-; framework-silicates-; plagioclase; pH-; temperature-; weathering-; mineral-water-interface
- TI: Pressure dependence of mineral-water reaction equilibrium in the low pressure range,  
 AU: Hiroshi-Shinohara; Koichiro-Fujimoto  
 SO: International-Symposium-on-Water-Rock-Interaction. 6, p. 635-638, YR: 1989

DE: phase-equilibria; experimental-studies; P-T-conditions; equilibrium-; low-pressure; mineral-water-Interface; thermodynamic-properties; andalusite-; nesosilicates-; orthosilicates-; silicates-; quartz-; silica-minerals; framework-silicates; albite-; plagioclase-; feldspar-group; sodium-chloride; high-temperature; minerals-; geochemistry-

H: Rare earth element geochemistry and evolution of submarine geothermal system accompanied by Kuroko sulfide-sulfate mineralization in Japan.

AU: Shikazono-N; Matsumoto-Ryo

SO: International-Symposium-on-Water-Rock-Interaction. 6. p. 633. YR: 1989

DE: Japan-; economic-geology; polymetallic-ores; mineral-deposits; genesis-; hydrothermal-processes; rare-earths; geochemistry-; europium-; cerium-; trace-elements; metals-; geothermal-systems; knofcotype; sulfides-; sulfates-; Far-East; Asia-; anomalies-; host-rocks; volcanic-rocks; basalts-; Eh-; marine-environment; environment-; metal-ores; mineral-deposits-; genesis-

TI: Mixing diagrams of hydrothermal solutions and their applications to some hydrothermal ore deposits in Japan.

AU: Shifou.e-Yasuhiro

SO: International-Symposium-on-Water-Rock-Interaction, 6, p. 625-628. YR: 1989

DE: Japan-; economic-geology; tungsten-ores; mineral-deposits; genesis-; hydrothermal-processes; fluid-inclusions; geochemistry-; Far-East; Asia-; metal-ores; mixing-; graphic-methods; temperature-; chloride-ion; ore-forming-fluids; inclusions-; Fejigatani-Deposit; Kiwada-Deposit; Kaneuchi-Deposit; Ohtani-Deposit; Yaguki-Deposit; mineral-deposits-; genesis; methods-; paleosalinity-

TI: A comparison of pyrite oxidation rates in batch, mixed flow, and plug flow reactors.

AU: Rimstidt-J-Donald; Newcomb-William-D

SO: International-Symposium-on-Water-Rock-Interaction. 6. p. 581 - 584. YR: 1989

DE: geochemistry-; processes-; oxidation-; iron-; pyrite-; sulfides-; experimental-studies; methods-; reactions-; ferric-iron; metals-; mineral-water-interface

TI: The effect of iron and magnesium on the stability of illite and smectite.

AU: Raz-Urs; Peters-Tjeck

SO: International-Symposium-on-Water-Rock-Interaction. 6. p. 569-572. YR: 1989

DE: iron-; geochemistry-; clay-minerals; magnesium-; clay-mineralogy; experimental-studies; stability-; phase-equilibria; sheet-silicates; minerals-; metals-; alkaline-earth-metals; illite-; silicates-; smectite-; ferric-iron; ferrous-iron; thermodynamic-properties; muscovite-; mica-group; eeladonite-; pyrophyllite-

TI: Quench fractionation in Columbia River Basalt and implications for basalt-ground water interaction.

AU: Hoover-James-D; Murphy-William-M

SO: Special-Paper-Geological-Society-of-America... 239. p. 307-310. YR: 1989

DE: Columbia-Plateau; petrology-; Igneous-rocks-; basalts-; chemical-fractionation; Columbia-River-Basalt; Grande-Ronde-Basalt; Cohasset-Basalt; Western-U.S.; United-States; North-America-; volcanic-rocks; ground-water; composition-; glasses-; mineral-composition; differentiation-; crystallization-; major-elements; chemical-composition; cooling-

TI: Interaction between surface water and basalt flows of the Grand Ronde Formation, Columbia River basalt group; secondary hydroexplosion structures.

AU: Croot-L-L; Comings-M-L

SO: Bulletin-New-Mexico-Bureau-of-Mines-and-Mineral-Resources. 131. p. 209. YR: 1989

DE: Washington-; stratigraphy-; Miocene-; Idaho-; petrology-; igneous-rocks; Grande-Ronde-Basalt; Columbia-River-Basalt; surface-water, basalts-; volcanic-rocks, phreatomagmatism-; northeastern Oregon; Grande-Ronde-River; Wenaha-River; lava- textures-; lava-flows; volcanic-breccia; breccia-; clastic-rocks; mixing- oxidation-, Mossbauer-spectra; shear-; fractures-; vaporization-; joints-; patterns-, magnetite- oxides-; Neogene-, Tertiary-; Pacific-Coast, Western-U.S." United-States

TI: Calculating the theoretical change in the mode of a rock by simple and ideal water-rock interaction.

AU: Tsuzuki-Yoshiro

SO: Geochemical-Journal. 23. (3). p. 117-128. YR: 1989

DE: metasomatism-; processes-; hydrothermal-alteration; phase-equilibria- minerals-; theoretical-studies- rock-water-interface; mineral-composition; dissolved-materials; reactions-; precipitation-, physicochemical-properties; matrix-; geothermal-gradient; temperature-; models-; mineral-assemblages, veins-; wallrock-alteration; petrology-; glass- oxides-; kaolinite-; clay-minerals, sheet-silicates; silicates-; quartz-, silica-minerals, framework-silicates, solubility-, equations-; qualitative-analysis

TI: The effect of temperature gradient on the interaction between geothermal water and rock; an approach by numerical simulation.

AU: Takeno-Naoto

SO: Mining-Geology. 39. (5(217)). p. 295-304. YR: 1989

DE: metasomatism-; processes-; hydrothermal-alteration; mineral-deposits; genesis-; hydrothermal-processes; igneous-rocks; pyroclastics-; tuff-; alteration-; mineral-deposits-; genesis; geochemistry-; experimental-studies; volcanic-rocks

TI: Epidiots; implications for water/rock interaction in submarine hydrothermal systems,

AU: Bettison-Lori-A; Schiffman-Peter; Smith-Brian-M

SO: Anonymous. AGU 1987 fall meeting. Eos, Transactions, American-Geophysical-Union.. 68. (44). p. 1546 YR: 1987

DE: metasomatic-rocks; mineral-assemblages; interpretation-; epidots; epidote-; hydrothermal-alteration; metasomatism-; hydrothermal-conditions; salinity-; chemical-composition-; oxygen-; isotopes-; O-18/O-16; stable-isotopes; vents-

TI: Thermobarometry of hydrothermal alteration in the Los Azufres geothermal system (Michoacan, Mexico); significance of fluid inclusion data.

AU: Cathelineau-M; Izquierdo-G; Nieva-D

SO: Chemical-Geology. 76. (3-4). p. 229-238. YR: 1989

DE: Mexico-; economic-geology; geothermal-energy; metasomatism-; processes-; hydrothermal-alteration-; fluid-inclusions; P-T-conditions; geologic-thermometry; Michoacan-; Los-Azufres; reservoir-properties; geothermal-fields; geologic-barometry; inclusions-; mineral-inclusions; hydrothermal-conditions.

TI: Kinetics of the interaction, of plagioclase with a water-salt fluid at 300 degrees C and 1 kbar.

AU: Koteff-nikov-A-R; Shekina-T-I

SO: Geochemistry-International. 24. (4), p. 13-22. YR: 1987

DE: geochemistry-; processes-; ion-exchange; phase-equilibria; framework-silicates; plagioclase-; P-T-conditions; feldspar-group; silicates-; minerals-; framework-silicates-; plagioclase-; kinetics-; chemical-composition

TI: Geochemistry of groundwater-lake interaction in a carbonate terrain; application to geochemical exploration.

- AU: **Welhan-J-A**; Millar-W-D; Gate-J-E  
 SO: **Canadian-Geophysical-Union Joint-Annual-Meeting**, 13. p. A133  
 YR: 1988  
 DE: Newfoundland-; geochemistry-; water-; **ground-water**; lakes-; lacustrine-features; carbonate-rocks; saturation-; calcite-; carbonates-; runoff-; mathematical-models; models-; **FHREEQE**-; data-processing; mixing-; **carbon-dioxide**; **Danid's-Harbour**; western-Newfoundland; Eastern-Canada; Canada-; discharge-; zinc-; metals-; mineral-exploration; geochemical'-methods; zinc-ares; metal-ores
- TI: **Geochemical modelling of water-rock interaction in deep groundwater.**  
 AU: Pitkanem-P; **Pirhonen-V**; Snellman-M  
 SO: Water-Science-and-Technology.. 20. (3).. p. 245-246. YR: 1988  
 DE: Finland-; hydrogeology-; ground-water; geochemistry-; models-; surveys-; Scandinavia-; Western-Europe-; Europe-; Lavia-; rock-water-interface; **PHREEQE**-; EQ-3/6; chemical-composition-; mineral-composition-; intrusions-; equilibrium-; igneous-rocks
- TI: Partition between trace and major elements during **mineral dissolution.**  
 AU: Michard-Gil  
 • SO: **International-Symposium-on-Water-Rock-Interaction**. 5. p. 386-389. YR: 1986  
 DE: crystal-chemistry; sulfates-; partitioning-; trace-elements-; major-elements; solution-; partition-coefficients; precipitation-; **solubility**-
- TI: Chemical and isotopic systematic« of **-oceanic hot springs.**  
 AU: Bowers-Telesa-Suter  
 SO: totemational-Symposium-on-Water-Rock-Intera.ction. 5. p. 76-78., YR: 1986  
 DE: Pacific-Ocean; oeeano.gra.phy-; ocean-floors; rock-water-interfâce; sea-water; basalts-; volcanic-rocks; hot-springs; springs-; oxygen-; - hydrogen-; isotopes-; O-18/Q-16; stable-isotopes; D/H-; deuterium-; sulfur-; S-34/S-32; mid-ocean-ridge-basalts; mineral-composition; East-Pacific-Rise; thermal-waters ; hydrogeology-
- TI: **Groundwater/rock interaction**; 'water **interaction with clinker** from Powder River basin.  
 AU: Herring-James-R; Wilson-Stephen-A  
 SO\*: American-Geophysical-Union. 6«. (44). p. 1291 YR: 1987  
 DE: United-States; hydrogeology-; ground-water; water-; elin.ke.r; mineral-composition; composition-; **temperature**-; **aquifers**-; water-quality; Western-U.S.; Southwestern-U.S.; experimental-studies; hydrochemistry-; geochemistry-
- TI: (18)O/(16)O evidence for fluid-rock interaction in **the upper mantle**; data from **ultramafic nodules and K-rich volcanic rocks** in Italy.  
 AU: Taylor-Hugh-P Jr; Gregory-Robert-T; Tun-Bruno  
 SO: Mathematical-and-Physical-Sciences. 218. p. 1-37. YR: 1987  
 DE: Italy-; geochemistry-; isotopes-; oxygen-; 0-18/016; magmas-; differentiation-; fractional-crystallization; igneous-rocks; volcanic-rocks; Southern-Europe; Europe-; ultramafic-composition; stable-isotopes; **rock-water-interface**; **upper-mantle**; mantle-; alkali-basalts; basalts-; kimberlite-; ultramafics-; mineral-composition; concretions-; secondary-structures; sedimentary-structures; open-systems; **Alban-Hills**; Mount-Vulsini
- TI: Interaction of **organic adds** with carbonate mimera! surfaces in **seawater and** related, solutions; I., Fatty .acid adsorption..  
 AU: Zullig-James-J; Morse-John-W  
 SO: Geochimica-et-Cosmochimica-Acta. 52., (6). p. 1667-1678, YR: 1988
- DE: sea-water; geochemistry-; organic-materials; fatty-acids; processes-; adsorption-; diagenesis-; carbonates-; aqueous-solutions; solubility-; calcite-; aragonite-; dolomite-; magnesite-; desorption-; thermodynamic-pcpeities
- TI: A study of lake-ground water Interaction, in west-central Minnesota; Mineral Lake.  
 AU: **McArdell-Bian-W**; Leete-Jeanette-H; Nohring-Eric  
 SO: American-Geophysical-Uûion. 68, (44).. p. 1274 YR: 1987  
 DE: Minnesota-; hydrogeology-; hydrology-; Ottertail-; Midwest-; United-States; lakes-; ground-water; surveys-; west-central-Minnesota; Mineral-Lake; Ottertail-County; legislation-; changes-of-level; water-management; **laboratory-studies**
- TI: The interaction of water with **day mineral surfaces.**  
 AU: **Newman-A-C-D**  
 SO: **Monograph-Mineralogical-Society**. 6. p. 237-274, YR: 1987  
 DE: clay-mineralogy; experimental-studies; water-; spectra-; EPR-spectra; isotherms-; ions-; vermiculite-; clay-minerals; sheet-silicates; silicates-; montmorillonite-; beid.eii.te-; smectite-; sepiolite-; palygorskite-; mixed-layer-minerals; sorption-; halloysite-; thermodynamic-properties; infrared-spectra; expansive-materials; mathematical-models' models-
- TI: Interaction of radium with freshwater sediments and! their mineral components; III» Muscovite and feldspar.  
 AU: Benes-P; Borovec-Z; Strejc-P  
 SO: Journal-of-Radioanalytical-and-Nuclear-Chemistry. 90. (1). p. 91-103, YR: 1986  
 DE: radium-; isotopes-; Ra-224; sediments-; geochemistry-; freshwater-environment; adsorption-; desorption-; radioactive-tracers; muscovite-; mica-group; sheet-silicates; silicates-; feldspar-group; framework-silicates; albite-; plagioclase-; migration-; composition-; mineral-composition
- TI: Mineral **alteration** and fluids **characterization of Miaravalies** geothermal field, Costa Rica.  
 AU: Pietro-Viale; **Corrales-Rodrigo**; **Maineri-Alfredo**; **Mayra-Corella**; Vaca-ILeonei  
 SO: mternational-Symposium-on-Water-Rock-Interaction. 5. p. 667-670. YR: 1986  
 DE: Costa-Rica; hydrogeology-; thermal-waters; Central-America; geothermal-fieids; Miaravalles-; mineral-assemblages; hydrothermal-aiteration; metasomatism-; northestern-Costa-Rica; aquifers-; chemical-composition ; rock-water-interface
- TI: **Experimental** study of **the** interaction between carbonate rocks and **F-bearing** solutions **under a flow** condition at elevated, pressure and temperatures..  
 AU: Ylsham-Zeng; Juying-Wei; Dingguo-Xiong  
 SO: Intemational-Symposi'um-on-Water-Rock-Int'eration. 5. p. 656-659. YR: 1986  
 DE: China-; **economic-geology**; min.erai-resou.rces; P-T-conditions; carbonate-rocks; fluorine-; rock-water-interface; chemical-composition; thennodynamic-properfaes; mineral-assemblages; **hydrothennal-afetiation**; metasomatism-; hydrothermal-processes; mineral-depositts,-genesis; Far-East; Asia-; Inner-Mongolia; Northern-China
- TI: The: **geochemical** environment of **formation of the unconformity uranium** deposits of **northern Australia.**  
 AU: Vidale-Buden-Rosemary  
 SO: btemational-Symposium-on-Water-Rock-Interaction. 5. p. .597-600, YR: 1986



DE: Northern-Territory; economic-geology; uranium-ores; metal-ores; mineral-deposits; unconformities; chemical-composition; metasedimentary-rocks; host-rocks; schists; mineral-assemblages; ore-forming-fluids; Nabarlek; Jahiluka; Ranger; Koongaira; Australia; Australia-

TI: Hydrothermal alteration in wells **LA-3**, **LA-4** and **LA-6 Aluto-Langano geothermal** field. Ethiopia.

AU: Teklemariam-Meseret

SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 565-568. YR: 1986

DE: Ethiopia; petrology; metasomatism; geothermal-fields; East-Africa; Africa; wells; hydrothermal-alteration; **Aluto**; **Langano**; permeability; high-temperature; clay-minerals; sheet-silicates; silicates; carbon-dioxide; mineral-assemblages; basalts; volcanic-rocks; geologic-thermometry

TI: The **chemical characteristics of the hydrothermal fluids at the Krafla and Reykjanes systems**, as inferred from the coexisting **mineralogy**.

AU: Sveinbjomsdottir-Arny-E

SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 546-549. YR: 1986

DE: Iceland; hydrogeology; thermal-waters; Western-Europe; Europe; Kralla; hydrothermal-alteration; metasomatism; geothermal-systems; mineral-assemblages; chemical-composition; smectite; clay-minerals; sheet-silicates; silicates; chlorite; chlorite-group; amphibole-group; chain-silicates; epidote; epidote-group; sorosilicates; orthosilicates; Reykjanes-Penninsula

TI: Acid **hydrothermal** alteration occurrences in Philippine **geothermal** areas.

AU: Reyes-Agnes-G

SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 461-465. YR: 1986

DE: Philippine-Islands; petrology; metasomatism; hydrothermal-alteration; Far-East; Asia; **mineral-assemblages**; acids; geothermal-fields; pH; fluid-inclusions; chemical-composition; Palimpinon; **hot-springs**; springs; fumaroles; SEM-data; petrography; rock-water-interface; oxidation; hydrolysis-

TI: Study on experiments of **iron-bearing** ore solution formed by interaction of potassium-sodium halogenide water with rocks.

AU: Liang-Xiangji

SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 368-371. YR: 1986

DE: China; economic-geology; iron-ores; experimental-studies; rock-water-interface; high-temperature; Far-East; Asia; solution; metal-ores; potassium; sodium; geochemistry; **hydrothermal**-processes; ore-forming-fluid; mineral-deposit-formation; diabase-

TI: Moderate **temperature zeolitic** alteration in a **cooling pyroclastic** deposit.

AU: Levy-Scnon-S; O'Neil-James-R

SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 361-364. YR: 1986

DE: Nevada; petrology; metasomatism; Nye; Topopah-Spring-Member; Paintbrush-Tuff; pyroclastics; volcanic-rocks; Yucca-Mountain; southwestern-Nevada; Western-U.S.; United-States; zeolite-group; framework-silicates; silicates; alteration; temperature; cooling; zeolitization; oxygen; isotopes; O-18/O-16; stable-isotopes; smectite; clay-minerals; sheet-silicates; Nye-County; vitrophyre; mineral-assemblages; hydrothermal-alteration; Miocene; Neogene; Tertiary-

TI: The distribution of alteration phases during **basalt-groundwater** interactions; preliminary insights from flow-through experiments.

AU: Lane-D-L; Rawson-S-A; Allen-C-C; Bumell-J-R

SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 349-452. YR: 1986

DE: Washington; engineering-geology; waste-disposal; rock-water-interface; basalts; volcanic-rocks; ground-water; Pacific-Coast; Western-U.S.; United-States; repository; radioactive-waste; construction; experimental-studies; alteration; mineral-assemblages; movement-

TI: Alteration mineralogy and ground water composition in the East **Bull Lake** anorthosite-gabbro complex, NE Ontario, Canada.

AU: Kamineni-D-C; Gascoyne-M

SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 310-312. YR: 1986

DE: Canadian-Shield; hydrogeology; ground-water; **East-Bull-Lake**; anorthosite; gabbros; North-America; plutonic-rocks; alteration; rock-water-interface; epidote; epidote-group; sorosilicates; orthosilicates; silicates; amphibole-group; chain-silicates; prehnite; sheet-silicates; **pumpellyite**; zeolite-group; framework-silicates; P-T-conditions; clay-minerals; chemical-composition; hydrogen; oxygen; metamorphism; mineral-assemblages;  $K^+$ -grade-metamorphism; isotopes; D/H; stable-isotopes; O-18/O-16

TI: **Hydrothermal** alteration at **Mururoa Atoll (French Polynesia)**,

AU: Ducioignon-P; Meunier-A; Beaufort-D; Gachon-A; Buigues-D

SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 175-178. YR: 1986

DE: Polynesia; petrology; metasomatism; French-Polynesia; Mururoa-Atoll; Tuamotu-Islands; basalts; volcanic-rocks; hydrothermal-alteration; secondary-minerals; physicochemical-properties; electron-probe-data; paragenesis; trachytes; mineral-assemblages; olivine; olivine-group; nesosilicates; orthosilicates; silicates; ankerite; carbonates; calcite; nontronite; clay-minerals; sheet-silicates

TI: Tourmalines in hydrothermal mineral assemblages from **Lipderello** geothermal field (Italy).

AU: Cavarretta-Giuseppe; **Puxeddu-Mariano**

SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 108-111. YR: 1986

DE: Italy; petrology; metamorphism; Lipderello; Southern-Europe; mineral-assemblages; tourmaline; ring-silicates; silicates; geothermal-fields; authigenic-minerals; contact-metamorphism; emplacement; San-Pompeo-Well

TI: A nodal domain integration model of two-dimensional heat and soil-water flow coupled by soil-water phase change.

AU: Hromadka-Ted

SO: International Journal of Rock Mechanics and Mining Sciences and Geomechanics-Abstracts. 87-9, 124 p. YR: 1987

AB: A model of phase change in freezing and thawing soils is developed for cold regions engineering problems which require two-dimensional analysis of the thermal regime of soils. These problems include complex boundary conditions such as atmosphere/ground surface thermal interaction and snowpack insulation. Other concerns include complex soil conditions such as the presence of a peaty muskeg or tundra-like soil which may provide thermal insulation for underlying muskeg or tundra-like soil which may provide thermal insulation for underlying ice-rich mineral soil. A simple two-dimensional model is developed for use in cold regions engineering studies. A Fortran computer program is available which accommodates two-dimensional heat and soil-water flow models as coupled by an isothermal phase change model. The program can be used to analyze two-dimensional freezing-thawing problems which have sufficient known information to supply the necessary modeling parameters, boundary conditions, and initial conditions.—Modified journal abstract.

## Özler / Abstracts

Eidin Irakuri, Brian K, Hokbmrth and Ali Koçysğit, "1997: *Implications of Jurassic Ekeri identified in ike Tokat Complex, northern Turkey*: *Gcol. Mag.* 134 (1), 91-97.

**Abstract:** The Tokat Complex: is a strongly deformed tectano-sedimentary mixture of low-grade metamorphic rocks with abundant leucocrystallized limestone and relatively rare, serpentinite and radiolarian chert in blocks- of variable size.. Samples from the radiolarian chert blocks» found in highly crushed zones, each of which 'Corresponds, to a thrust sheet, within an imbricate -thrust zone, have yielded, a. Tithonian fossil assemblage. They are interpreted as tectonic inclusions emplaced within the Tokat Complex alter its main post-early Pennian-pre- Liassic metamorphism, and were, derived, from the rifting and opening of a Neotethyan ocean... 'The presence of Tithonian. blocks within low-grade metamorphic rocks of the Tokat Complex shows' that Tethys ocean, was, in existence in this region by latest Jurassic time... We also suggest that the presence of ophiolitic sices imbricated with the Pontide basement, Tokat Complex,» explains the swarm, of North Anatolian. Fault Zone (NAFZ) splay in this region, where the NAFZ likely followed, a major pre-existing crustal weakness (figs. 1-2).

Nilüfer A. Saraç» 1996» *Seümo-Tektonik Characteristics of ike N&rik Anatolian Fault Zone Between Akyazı amâ Düzce (Boht, Turkey)*: *International Geology Review*, vol 3S p: 876-882

**Abstract:** The active- Anatolian fault zone (NAFZ) presents very complex seismo-tectonic activity. The occurrence of the Abant earthquake in 1957 (Ms=7.1) and the Mudurnu eatbquake in 1967 (Ms=6.8) are only two examples of several seismic events associated with intense tectonic activity of the NAFZ. Statistical analyses of earthquakes in an area extending between 30° 30'to 31° 30'E Long, and 40° 15\* to 41\* 0074 Lat, reveal that epicenters generally were shallow.. However,, a few-deep' epicenters also were located,, some of which reached a depth, of 30 km. The epicenters, were found to concentrate- in a zone lying between 'the Düzce and. Akyazi Plain to the north of Almacik Mountain and in the Adapazarı Plain, The Northern Anatolian fault displaysan en echelon character in the area, except for' the eastern part, where it extends, as a. single segment The en. echelon, character of the NAFZ is interpreted as. a structure distributing, 'the- potential energy and consequently .reducing the. intensity of earthquakes, giving rise to micro-earthquakes of magnitudes less, 'than 4.2 (Fig. 7).

Figure 7. A, Depth histogram of macro-earthquakes, in km.. B. Magnitude (Ms) histogram of micro-earthquakes.

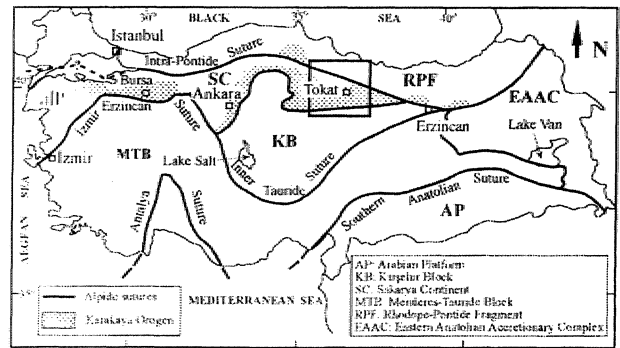


Figure 1. Summary map showing distribution of Karakaya complex and the location of the study area (slightly modified after Tüysüz & Yigitbaş, 1994).

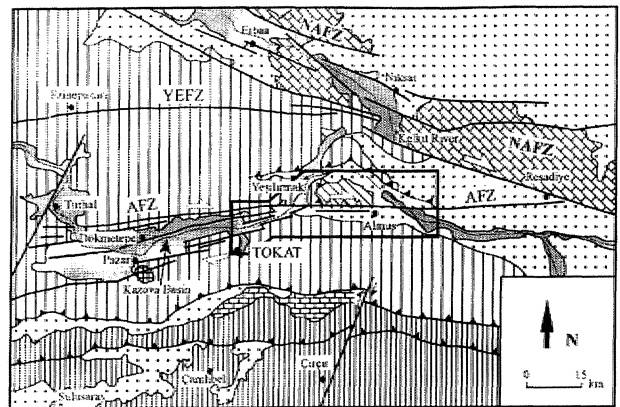
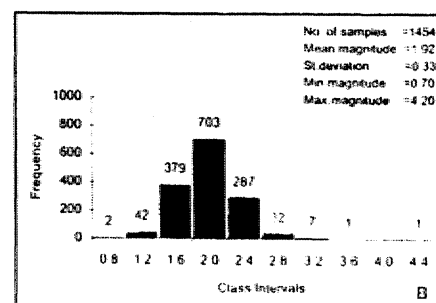
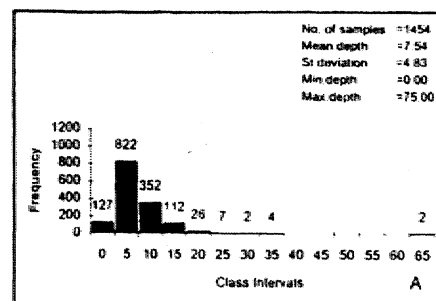


Figure 2. Map showing the regional setting of the study area and the regional distribution of Tokat metamorphic rocks. The half arrows show the relative motion sense on the faults. AFZ-Almus Fault Zone, NAFZ-North Anatolian Fault Zone, YEFZ-Yagmurlu Ezinepazar Fault Zone (modified after Bozkur & Koçyigit, 1995a). For location see Figure 1.



W.T. Dean, F. Martta, O. Monod, Y. Gfınay, H. Kozlu and N. Bozdoğan» 1997, *Precambrian to Cambrian stratigraphy of the Penbeğli-Tut inlier, southeastern Turkey*: *Geol. Mag.*, 134(1), 37-53.

**Abstract:** The oldest rocks in the Penbeğli-Tut inlier of southeastern Turkey belong to the Meryemuşağı Formation (base not seen); they are mostly clastic rocks, of late Precambrian age, overlain with angular unconformity by unfossiliferous quartzites (270 m est.) of the Zabok Formation. The latter unit is succeeded conformably by the Koruk Formation (Lower/Middle Cambrian), comprising almost 200 m of dolomite and grey and red nodular limestone, and the Sosink Formation (Middle Cambrian), about 600 m of silty mudstone and sandstone with a few thin limestone beds, overlain unconformably by Cretaceous carbonates. The closest comparison is with the Derik-Mardin area 220 km to the east, where the section is more complete. The upper Koruk Formation contains trilobites of the Pardailhaia and Solenopleuropsis biozones; trilobites from the Sosink Formation indicate the Solenopleuropsis Biozone, a post-Solenopleuropsis interval and a level

with *Holasaphus mesopotamicus*, known only from the Derik area, *Acritarchs* from the highest Koruk Formation and the whole of the Sosink belong to the lower part of microfauna A2, described from the Middle Cambrian of eastern Newfoundland (Fig. 2-3).

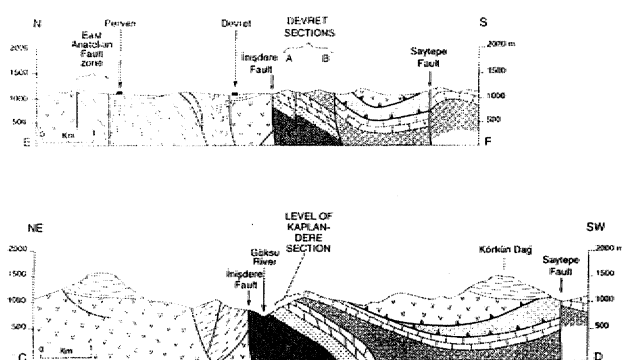


Figure 3. Transverse sections in the western (E-F) and eastern (C-D) parts of the inlier. For location and key, see Figure 2 (Dean ve diğ., 1997-Abstract).

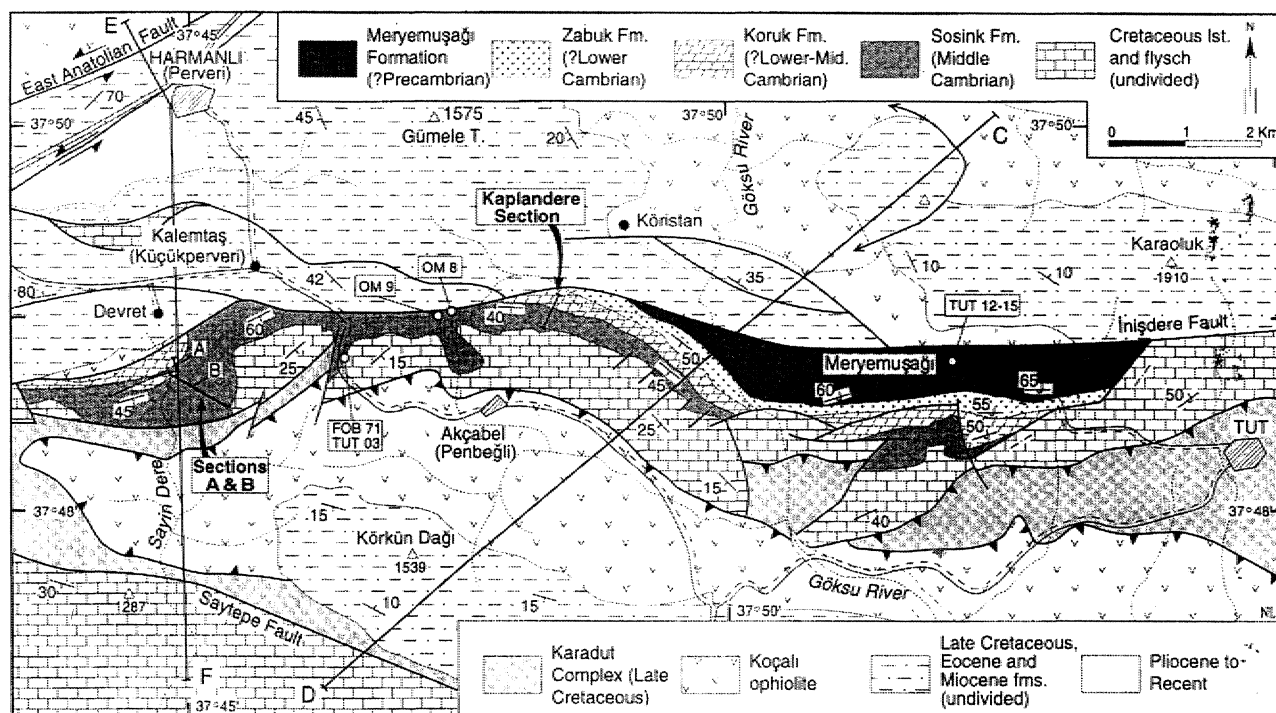


Figure 2. Geological map (courtesy T.J.A.O., with emendations) of part of the Penbeğli-Tut inlier. Note recent changes to certain older place names, which are shown in parentheses. Letters A and B denote measured sections south of Devret (Dean ve diğ., 1997).

A. Poisson, J.J.C. Guezou, A. Öztürk, S. İnan, H. Temiz, H. Gürsoy, K.S. Kavak mmê S. Özden, 1996, *Tectonic Setting and Evolution of the Sivas Basin, Central Anatolia, Turkey*; International Geology Review, YoL 38, p: 838-353.

**Abstract:** The Sivas Basin is one of several Central Anatolian basins. It developed mainly after the closure of the northern branch of Neotethys. Its location between the Kırşehir Massif and the Taurides implies that it should not be confused with the Inner Tauride ocean, located south of the Eastern Taurides. The basement of the Sivas Basin, consists of ophiolitic nappes and mélanges that were thrust toward the margins of the continental blocks present in this area-the Pontide belt to the north and the Anatolide-Tauride platform to the south. The basin was initiated by tectonic subsidence at the end of the Cretaceous, and it can be compared to a foreland basin during Paleocene and early to middle Eocene time. It was emergent during late Eocene and Oligocene time, although it continued to subside. A transgression, in some parts of the basin occurred, during the Oligocene and early Miocene (maximum flooding). During the Pliocene, it was affected by regional compression directed toward the NNW, which resulted from convergence of the Arabian and Eurasian plates. This basin, may have developed as an intracontinental basin within the Tauride platform and probably never had an oceanic basement. As a result of this work the general paleogeographic organization of Central Anatolia and Northern Tethys during the Mesozoic should be revised.

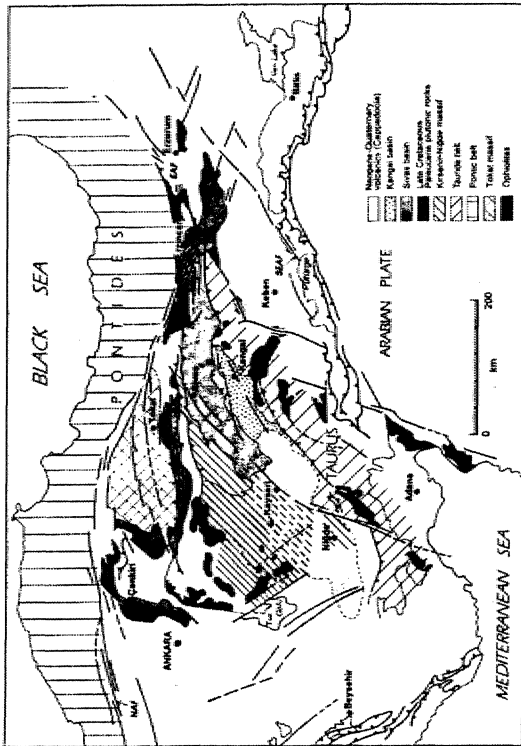


Figure 1. Location of the Sivas Basin in the geodynamic context of the Middle East.

## Sempozyum / Seminer / Konferans

### I. ULUSAL KIRMATAŞ SEMPOZYUMU '96

Kırmataşlar konusunda ilk yapılan ulusal sempozyumu, TMMOB Maden Mühendisleri Odası (İstanbul Şubesi) ile TMMOB Jeoloji Mühendisleri Odası (İstanbul Şubesi) tarafından, 7-8 Ekim 1996 tarihinde İstanbul'da gerçekleştirilmiştir. Yaklaşık 30'a yakın bildirinin verildiği sempozyumda, bildiri- lere ait makale metinleri, bildiriler kitabı olarak basılmıştır. 24 Makaleden oluşan, bu kitabın içindekiler aşağıda verilmiştir.

#### I. ULUSAL KIRMATAŞ SEMPOZYUMU '96 BİLDİRİLER KİTABI

### I. ULUSAL KIRMATAŞ SEMPOZYUMU

# '96

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Ş. Urfâ, Ovası Sulaması IV. Kısım İnşaatı Betonlarında Kullanılan Kırmaç Kalker Agreganın Taşımı ile iyileştirilmesi  
F. Mih. KOCABEYLER

Sahbayır Kuvâis Kumu Ocağı Papatyudarmın Çevreye Etkisinin İncelenmesi

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Ö. Yılmaz ERKOÇ

Mermer Atıklarının. Maden İşletmelerinde Stabilizasyon Açılı Değerlendirilebilirliği

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Mehmet NECDET, Zekâ. GÖKER

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Ali KIZILAY

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Prof. Dr. Bektaş UZ

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Kırıntı İlçesi İkitelli Köyünde Bulunan Pafta. No; 2666 Olan Taşocağı Sahasının Jeolojisi ve İşletilebilirlik Etüdü  
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Prof. Dr. Yalçın KAYTAZ, Araş. Gör. İsmail YILDIRIM

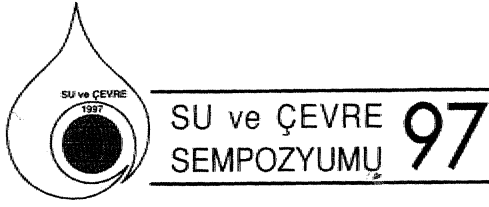
Taşınma Kulamının. Beton özellikleri. Üzerindeki Etkisi  
Ali UĞURLU

Sivas ve Dolayındaki Doğal ve Kırmaç Ocakları Elde Edilen Agregaların Yapı Gereci. Olarak Kullanılabilirliği  
Fuat ERDEM, Ali Borak YENER., Zafer ÖZGÖRÜN, Atilla TURABİK

Otoyol İnşasında Kırıntı Ocağı Seçimi: Bir Vaka Analizi  
Dr. Süleyman DALGIÇ, A. Malik GÖZÜBOL, Selahattin HASDEMİR

## SU VE ÇEVRE SEMPOZYUMU

2-5 Haziran 1997 tarihinde TMMOB Jeoloji Mühendisleri Odası İstanbul Şubesi ile Bakırköy Belediyesi-Çevre Koruma Müdürlüğü tarafından gerçekleştirilen. "Su ve Çevre- Sempozyumu 1997" 55 bildiri sunulmuş ve bu bildiri metinleri Bildirilen Kitabı altında toplanmıştır, Sempozyumda genellikle Su, Çevre ve Kentleşme çerçevesinde bildiriler sunulmuştur. Bildiriler kitabında yer alan makale bibliyografyası, aşağıda verilmiştir..



## BİLDİRİLER



### İÇİNDEKİLER

İstanbul Su, Havzalarının. Korunması İçin. Yeni Bir Yöntem Modeli: Dr. Ali Taip ÖZDEMİR

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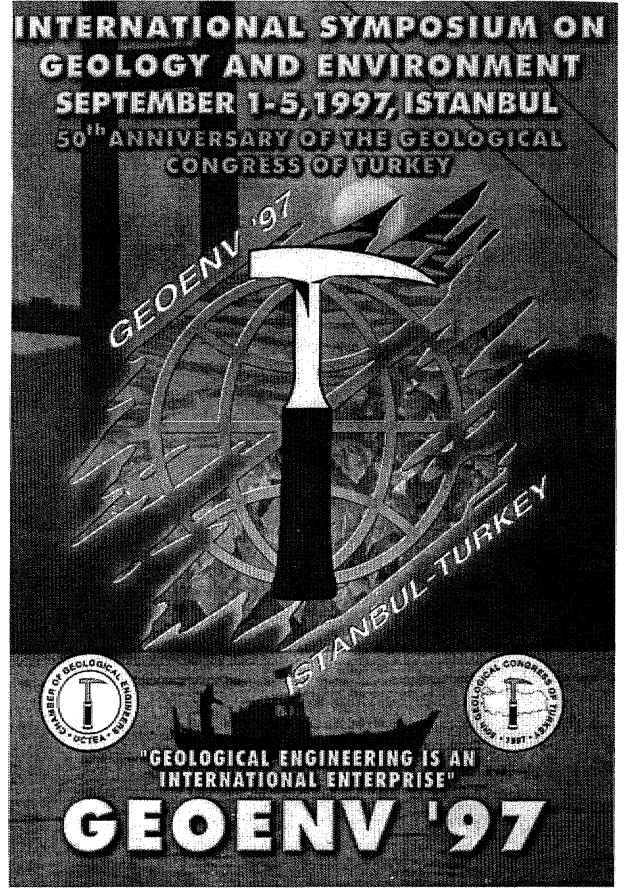
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Promlems of stone preservation on historical monuments in germany-a review of the methods, and metaterials in use :  
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Decay and treatment of gr.anitic rocks : J. D. RODRIGUES

The conservation of cappadocian rock-hewn churches: The role of iccrom and other mtergovermental organisations :  
M.L.TABASSO

Deterioration of the natural and historical monuments in capadoda (Turkey) : A. BABA,t» YILMAZE I

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A. CAPRA, L. CINQUEGANA, DIVITIS»  
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.Ancient stones used in the neapolitan architecture :  
L. CINQUEGRANA, DIVOTS, FOLLI

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10-12 Haziran 1998 tarihleri arasında Bartın-AmasraMa. yapılacak olan kongrede, TMMOB Maden Mühendisleri Odası Zonguldak Şubesi tarafından düzenlenecektir.

**Kongrede İşlenecek Konular**

### *L. Kemer Madencilğinde Ekonomik Politikalar ve Sosyal Sorunlar*

- Kömür madencilğinde gelişmeler
- Enerji, demir-çelik vb., sektörler<sup>1</sup> açısından üretim-İlkefçim politikaları
- Teknoloji transferi ve etkileri
- Kapatılan/özelleştirilen, sahalarda sosyal sorunlar
- Eğitim ve istihdam sorunları

### *2. Kömür Madencilğinin Bilim ve Teknolojisi*

- Arama ve Değerlendirme
- Araştırma-Geliştirme çalışmaları
- Teknolojik gelişmeler
- Kömür işletmelerinin özel sorunları ve çözümleri
- Ürün çeşitlendirme (koklaşırma, briketleme vb.)

### *J. İş Güvenliği ve İşçi Sağlığı*


- Gaz» toz» gürültü, yangın
- İş kazaları ve meslek hastalıkları

### *4» Çevre Sorunları*


**TÜRKİYE 11. KÖMÜR KONGRESİ**  
THE ELEVENTH COAL CONGRESS OF TURKEY

10-12 Haziran 1998  
10-12 June 1998

**BİRİNCİ DUYURU**  
First Announcement



*BARTIN-AMASRA / TÜRKİYE*



**TMMOB**  
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**ZONGULDAK ŞUBESİ**

Zonguldak Branch of the Chamber  
of Mining Engineers

## 51. TÜRKİYE JEOLojİ KURULTAYI (1998)

51. Türkiye Jeoloji Kurultayı 16-20 Şubat 1998 tarihleri arasında Orta Doğu Teknik Üniversitesi Kültür ve Kongre Merkezi'nde yapılacaktır. TMMOB Jeoloji Mühendisleri Odası tarafından düzenlenecek olan kurultayda işlenecek olan konular:

### 1. Genel Jeoloji

Stratigrafi-Paleontoloji, Sedimentoloji, Tektonik Mineraloji, Petrografi, Jeokimya, Jeostatistik

### 2., Metelik Madenler

Demir, Manganez, Bakır, Kurşun, Çinko, Krom, Nikel

### 3. Endüstriyel Hammaddeler

İnşaat Sanayi Hammaddeleri, Refrakter Sanayi Hammaddeleri, Seramik Sanayi Hammaddeleri, Kimya Sanayi Hammaddeleri

### 4. Enerji Hammaddeleri

Petrol ve Doğalgaz, Jeotermal Enerji, Kömür, Radyoaktif Mineraller



##### 5. Mühendislik Jeolojisi-Jcoteknik Etüt ve Uygulamalar

Baraj ve Gölet Yerleri,, Tünel, Yol, Köprü Ayakları,, Liman,, Rıhtım, Dalgakıran, Barınak Yerleri, Kaya ve Zemin Mekanığı.

##### 6. Hidrojeoloji

Karst Jeolojisi ve Hidrojeolojisi,, Yeraltısuyu Arama ve işletmesi, Kuyu Hidroloğı, Yeraltısuyu Kirliliğı

##### 7. Doğal Afetler, Kentleşme ve Çevre Jeolojisi

îmar Planına Esas Jeoloji Hizmetleri,, Yerleşim. Alanlarının Deprenselliliğı,, Yerleşim Alanlarının Belirlenmesinde Çevre Jeolojisi, Çevre Sağlığı ve Jeoloji, Doğal. Anıtlar

##### 8. Kıyı ve .Deniz Jeolojisi

##### 9. Maden, Petrol ve İnşaat Sektöründe' Sondajelık

Maden Arama Sondajları« Temel Sondajları« Enjeksiyon Uygulamaları, Petrol ve Boğalgaz Kaynaklarının Aranmasında Sondajelık Çalışmaları

##### 10. Doğal Kaynakların Aranması ve Değerlendirilmesi

Arama,, Yarma, Kuyu, Galeri ve Sondajların Planlanması ve Projelendirilmesi, Aramalarda Jeokimyasal ve Jeofiziksel Yöntemler, Yeraltı Jeolojisi,, Türkiye'nin Doğal Kaynak Potansiyeli ve Ekonomisi, Doğal Kaynakların Arama Ye işletme Aşamalarındaki Jeoloji Hizmetleri ve Yasalardaki Yeri

##### 11. Uzaktan Algılama-Coğrafik Bilgi, Sistemi Uygulamaları

## Kriton Curi Akdeniz Bölgesi Çevre Yönetimi Uluslararası Sempozyumu

I. DUYURU

### KRİTON CURI AKDENİZ BÖLGESİ ÇEVRE YÖNETİMİ ULUSLARARASI SEMPOZYUMU

18-20 Haziran 1998  
Antalya



Düzenleyen  
Boğaziçi Üniversitesi

18-20 Haziran 1998- tarihleri arasında Antalya'da, gerçekleştirilecek olan "Kriton Curi Akdeniz Bölgesi Çevre Yönetimi. Uluslararası Sempozyumu" Boğaziçi Üniversitesi tarafından düzenlenmektedir.

##### Sempozyum Konuları

- Çevre Yönetimi Standarttan (ISO 14000 vb.)
- Çevre Kirliliğı Antaşmazlıklarını Çözüm Yöntemleri
- Çevre Yönetiminde Bölgesel İşbirliğı.
- Çevre-Tüketici Korunması
- Çevre Dostu Ürünlerin Eko.nom.ik. Gelişmeye Etkileri



- Enerji Politikaları-Ceşitlilik Etkileşimi
- Turizm ve Çevre ilişkisi
- Çevre Yönetiminde Yerel Yönetimler ve Sivil Toplum Örgütleri
- Medya ve Çevre
- Çevre Konusunda Araştırma ve Geliştirme Yöntemleri
- Çevre Veri Yönetimi: Veri Toplama, ve Veri Tabanı Oluşturma
- Çevre Konularında Tahmin Yöntemleri
- Kirliliğin önlenmesi: Etkin Yönetim Stratejileri
- Çölleşme ve Erozyon önleme Politikaları
- Su Ürünleri Yönetimi
- Ormancılık Politikaları ve Yönetimi
- Tarım Politikaları ve Çevre.
- Atıkların Uzaklaştırılması: Taşıma, Tasnif ve Yer Seçimi.
- Hava Kalitesi ve Hava Kirliliği
- Deniz Kirliliği
- İçme Suyu Kaynakları ve Su Kalitesi
- Tehlikeli Maddelerin Taşınması ve Sınır ötesi Hareketleri

## Yeni Yayınlar / Kitaplar

### KARBONAT SEDİMANTOLOJİSİ

Dr. Eşref Atabey

TMMOB Jeoloji Mühendisleri Odası

Yayımları 45 (130 s.)

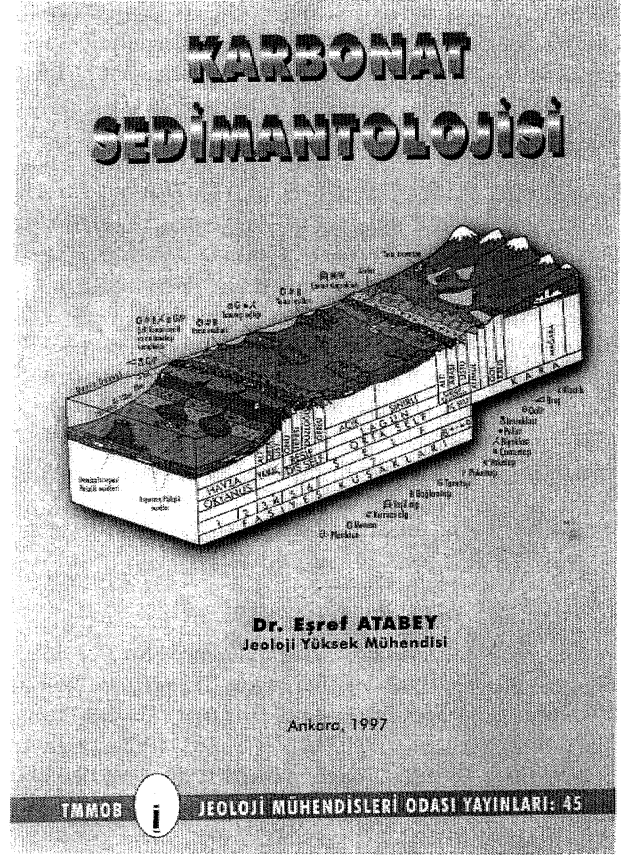
#### İÇİNDEKİLER

##### KARBONAT PETROGRAFİSİ

Karbonat Taneleri., Kütleli özellikler, Karbonat Kayacı Bileşenleri, Taneler, İskeletsel olmayan taneler, Giysili, taneler, Ooid ve pisoidler, Onkoidler, tskeletsel olmayan diğer taneler, Biyojen, Peloidler, Agrégat taneler; Intraklasaar, Ekst-raldastlar (litoklast., kalklitit), Terijen taneler., Ötijen taneler, tskeletsel taneler<sup>1</sup>, Bitkiler, Stroma.tol.it oluşumu. Hayvanlar, Bazı organizmalann ekolojik-paleoekolojik özellikleri., Mat-riks (Kireç çamuru)» Karadan türeme; tskeletsel gerecin parçalanması, Fiziko-kimyasal tepkime ile oluşan kireç çamuru, Bi-yo-Idmyasal tepkimeler, Su kimyasının değişimi, Duru Kalsit. (Spari Kalsit)» Karbonat Kayası Sınıflaması (Adlaması), Çö-kelme koşulları

##### KARBONAT DEPOLANMA ORTAMLARI ve FASİYES ÖZELLİKLERİ

Karasal. Karbonat Ortamları» Karst, fasiyesi, Kalış, fasiyesi, Karst ve kalışı tanımlayıcı kriterler; Tufa,, palustriie karbonat-lar» Traverten, Karasal karbonatların ekonomik önemi. Göl ortamı, Sürekli göller, Göl .kıyılan, Açık alanlar-, Geçici, göller, Yel (kumul) ortamı, Denizel Karbonat Ortamları, Gelgit düzlüğü ortamı, Gelgitüstü zonu fasiyesi kriterleri, Gelgitarası zonu fasiyesi kriterleri., Gelgitalh zonu fasiyesi kriterleri, Sahil ortamı» Orta şelf (lagün) ortamı, .Resif ortamı.» Resif tanımı,



Resif karmaşığı, Olgunlaşmış resif karmaşığı,, Olgunlaşmamış resif karmaşığı, Resiflerin sınıflandırılması,, Bileşime dayanan sınıflama, Organik, çatı resifi, Vermeticl. resifleri, Serpulid resifleri, Oyster (istiridy) resifleri.. Organik çatı ya. da. ekolojik resif, Şekle dayanan sınıflama, Kule resifi, Yama. resifi, Tepecik resifi.» Saçak resifi, Set resifi., Fara, Atol, Stratigrafi ve iç fasiyes dağılımına, dayanan sınıflama, Yamaç aşağı .karbonat çamuru tümsekleri., Tepecik resifi yokuşları. Duvarlı resif karmaşıkları, Resif kenarı tipleri., Resiflerin doku sınıflaması., Olgunlaşmış resif karmaşığı fa.siyesleri., Lagüner fasiyesi., Resif gerisi, kum fasiyesi, Resif düzlüğü, Resif tepesi fasiyesi, Resif çatısı fasiyesi., Resif yamacı fasiyesi., Yakınca döküntü fasiyesi, Uzakça, döküntü fasiyesi., Resif morfolojisini kontrol eden etkenleri Resif oluşturan organizmalann özellikleri., Taban topografyası ve deniz düzeyindeki nisbi değişiklikler., Transgresyon ve regresyon, Denizel çimentolarına, Bozucu fiziksel ve biyolojik işlevler, Resif karmaşığının gelişimi, Resif kayalarının rezervuar potansiyeli. Bank kenarı ortamı,, Havza, yamacı ortamı, Açık deniz, (pelajik) ortamı,, özel çökeltme ortamları, Sert zeminler ve kondanse istifler, Fosfatlı, çökeller, Fırtına çökelleri., Anoksik ortamlar» Anoksik göller, Anoksik havzalar, Su. kabarması (upwelling) sistemi etkisinde kalan şelf alanları., Açık deniz (okyanus) anoksik ortamlar, Karbonatlarda Fasiyes ve Mikrofasies, Fasiyes., Çökeltme fasiyesi, Ortam» Çökeltme ortamı, Mikrofasies,Havza ve alt.yamaç ortamları (1 ve 3 fasiyes kuşakları), Yamaç ortamları (fasiyes kuşağı 3 ve 4), Ya-

maç, yığılım» şelf ve sıg. so ortamları, ^Organik yığılım ortamları (fasiyes kuşağı 5), Açık dolaşmılı şelf ortamı, (fasiyes kuşağı 2 ve 7), Sınırlı denizel sıgılıklar (Fasiyes kuşağı 7 ve 8), Sınırlı denizel şelf lagun.leri-korunin.ali ortamlar (Fasiyes kuşağı 7 ve 8)

#### KARBONAT KAYALARININ DİYAJENEELİ

Yıkıcı Diyajenez, Biyolojik işlevler, Mekanik işlevler, Çözünme (erime), Yapıcı Diyajenez, Çimentolanma, Lifsi çimento, Taneli (granitler) çimento, Işınsal lifsi çimento, Mitait çimento, Sintaksiyal çimento, MenUsküs çimento, Mikroskalaktik (pandüi) çimento, Köpek dişi çimento, Vodoz'mili (Jeopetal yapı), Tekrar loris tallenme, Minerallerin kimyasal, değıştirmeleri (replasman), Fiziksel işlevler,, Diyajenez, Ortamları,, Mg/Ca aranma bağımlı kristalleşme oranları, Karbonatlı çökeltilerin diyajenez alanları, Resif karmaşıklarında diyajenez

#### KARBONAT KAYALARINDA. POROZITE

Parazite ve Tipleri

#### DOLOMİT ve DOLOMİTLEŞME

Protodolomit, Didolomit, Dolomiişmeyi Kontrol Eden Etkenler, Kimyasal etkenler, Su .kimyası, Magnezyum, Mg/Ca oranı ve tuzluluk, pH, Sıcaklık-ppCO<sub>2</sub>-basmç, Fiziksel-litolojik özellikler,, İMim özelliği, Dolomitleşme Modelleri,, Geriye akış (seepage reflexion) modeli, Tuz. kabuklaşması (şapka) modeli.» Mg 'temizliği modeli, Karışım zonu (dorağ türü) modeli, Dengesiz tuzluluk (şizohalin) modeli, Derin gömülme modeli, Dolomideşmenin Kökeni,, Litolojik veriler, Dor aylı izotop, iz elementler,, Dolomit Petrografisi

#### DIDOLOMİTLEŞME

Didolomiişme ile Gelişen Doku Tipleri, Didolomideşme Olayının Belirtileri

#### KARBONAT ÇÖKELLERİ SEDİMANTOLOJİ-STRATİGRAFI PRENSİPLERİ, SEDİMANTASYON VE TEKTONİK

Sedimentoloji Prensipleri,, Stratigrafi Prensipleri,,Litozona. ve biyozom kavramı, Ljtozomlar arasm.daki dikey ilişkiler,, Korelasyon,, Fasiyes, kavramı.» Sedimentasyon ve Tektonik

#### KARBONAT PLATFORMLARI

Karbonat Kenarlı Şelfleri» Karbonat Yokuşları, Epirik Platformlar, Yalıtılmış Platformlar, Batmış Platformlar

Not: Kitap Jeoloji. Mühendisleri Odasından temin edilebilir.

## METAMORFİK PETROGRAFI

**Prof. Dr. Yavuz Erkan**

Hacettepe: Üniversitesi. Mühendislik Fakültesi Yayın No: 28 (202 s.)

#### İÇİNDEKİLER

##### GİRİŞ

Metamorfizmanın Tanımı,, Metamorfizma Türleri

KASIM 1997

30

HACETTEPE ÜNİVERSİTESİ  
MÜHENDİSLİK FAKÜLTESİ  
YAYIN NO: 28



## METAMORFİK PETROGRAFI

Prof. Dr.. Yavuz Erkan

#### METAMORFİZMAYI OLUŞTURAN ETKENLER

Sıcaklık, Basınç, Litostatik Basınç, Stres, Akışkan Faz Basıncı.» Kimyasal Bileşim

#### METAMORFİZMA SÜREÇLERİ

Yeniden Kristalleşme, Yeni Mineral Oluşumu, .Metamorfik Farklılaşma, Metasomatizma, .Anateksi

#### MİNERAL TOPLULUKLARININ DİYAGRAM: ÜZERİNDE GÖSTERİLMELERİ

Giriş ve Tanımlamalar,, ACF-Diyagramı, A\*FK-Diyagramı, AFM-Diyagramı, Hesaplamalarda İzlenecek Sıra

#### METAMORFİZMA ZON VE FASİYESLERİ

Metamorfizma Zonları,, Metamorfizma Fasiyesleri, Metamorfizma Şiddeti/Derecesi

#### METAMORFİK KAYAÇLARIN SMİFLANDIRILMASI

#### METAMORFİK KAYAÇLARIN DOKUSAL ÖZELLİKLERİ

KristaloWastik Döke» KristaloMastik Daku, Kaınb Dokulan, Yönlü Doku

**KONTAKT METAMORFİZMA****Giriş**

Kontakt Metamorfizma Fasiyesleii,, Kontakt Metamorfik Kay açların Tanımlanmaları, Killi Kay açların Kontakt Metamorfizması ile Oluşan Kayaçlar, Karbonatların Kontakt Metamorfizması ile Oluşan Kayaçlar, Epüdistik Sedimanter Kayaçların Kontakt Metamorfizması ile Oluşan Kayaçlar,, Magmatik Kayaçların Kontakt, Metamorfizması ile Oluşan Kayaçlar,, Kontakt Metamorfizma ile ilgili olarak Türkiye'den örnekler

**DİNAMİK METAMORFİZMA****Giriş**

Kataklitik Kayaçların Sahada Gösterdikleri özellikler, Kataklitik Kayaçların Dokusal özellikleri, Kataklitik Kayaçların Sınıflandırılması, Birincil Bağlantıya Sahip Olmayan Kataklitik Kayaçlar, Birincil Bağlantıya Sahip Olan Kataklitik Kayaçlar, Kataklitik Kayaçların Birbirleri, ile ilişkileri, Çarpma Metamorfizması, Dinamik Metamorfizma ile ilgili olarak. Türkiye'den örnekler

**BÖLGESEL METAMORFİZMA****Giriş**

Bölgesel Metamorfizma ile Oluşan Kayaçlar, Killi Kayaçların Bölgesel. Metamorfizması ile Oluşan Kayaçlar, Magmatitlerin Bölgesel Metamorfizma ile Oluşan Kayaçlar; Karbonatların Bölgesel Metamorfizması ile Oluşan Kayaçlar, Epiklastik. Sedimanter Kayaçların Bölgesel Metamorfizması ile Oluşan Kayaçlar, Granulitler, EMOjitler, Migmatitler, Bölgesel Metamorfizma ile İlgili Olarak Türkiye'den örnekler

**LEVHA TEKTONİĞİ VE METAMORFİZMA**

Not: Kitap Jeoloji. Mühendisleri Odası ve H.Ü. Jeoloji Müh. Bölümü 06532 Beytepe/Ankara adresinden temin, edilebilir.

**MAGMATİK PETROGRAFI**

Prof. Dr. Yavuz Erkan

Hacettepe Üniversitesi Mühendislik

Fakültesi Yayın. No: 40 (181 s.)

**İÇİNDEKİLER****GİRİŞ**

Tanımlanmaları, Petrografinin Tarihçesi, Yerkürenin Genel Yapısı ve Yeikabığı, Genel Bilgiler, Yerkabuğu, Manto.» Diğer Tanımlamalar, Kayaçların Genel Sınıflandırılması ve Kay aç Çevrimi, Kayaçları Oluşturan Mineraller, Petrografik Çalışma Yöntemleri

**MAGMATİK KAYAÇLARM OLUŞUMU**

Magma, Magmanın Katılaşması, Magmanın Evrimi» Magmatik Farklılaşma,, özümleme, Magmalann Birbirleriyle- Karışmaları

**MAGMATİK KAYAÇLARIN JEOLJİK BULUNUŞ ŞEKİLLERİ**

intrüzif Kayaçlar,, Çevre Kayaçlarla Konkocdan İlişkide Olan Kütleler, Çevre Kayaçlarla. Diskordan. İlişkide Olan Kütleler, EksMzif Kayaçlar

**MAGMATİK KAYAÇLARIN YAFISAL/DQKUSAL ÖZELLİKLERİ**

Kayaçların Kristalleşme Derecesi, Kayaç Oluşturam. Minerallerin Sekileri, Kayaç Oluşturan. Minerallerin Tane Büyüklükleri, Bileşenlerin Birbirlerine Göre Olan Bağlı Büyüklükleri, Minerallerin Kayaç İçinde: Birbirlerine göre olan Durum ve Düzenleri,, Magmatik Sokulunüann İç Yapısı

**MAGMATİK KAYAÇLARDA RENK VE. BOZUNMA**

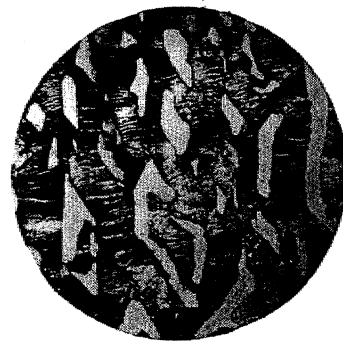
Remk, Bozunma

**MAGMATİK KAYAÇLARM SINIFLANDIRILMALARI**

Modal Mineralojik Bileşimin Saptanması, Normatif Mineralojik Beleşimin Saptanması, Magmatik Kayaçların Sınıflandırılması, Magmatik Kayaçlardaki. Birliktelik



HACETTEPE ÜNİVERSİTESİ  
MÜHENDİSLİK FAKÜLTESİ  
YAYIN NO: 40

**MAGMATİK PETROGRAFI**

Prof. Dr. Yavuz Erkan

**PLÜTONİK KAYAÇLARIN TANIMLANMALARI**

Açık Renkli .Minerallerden Ana Bileşen Olarak KUVARS ve FELDİSPAT içeren Plütooit Kayaçlar, Granit, Granodiyorit,, Tonalit\* Granitik Kayaçların Jeolojik Bulunuş Şekilleri, Açık. Renkli. Minerallerden Ana. Bileşen Olarak FELDİSPAT İçeren, Kuvars ve Feldispatoidin Çok Az Bulunduğu veya Hiç Olmadığı Plütonik Kayaçlar , Siyenit,, Monzanit, Diyorit,, Gabro, Açık Renkli Minerallerden Ana Bileşen Olarak FELDİSPAT ve FELDİSPATOİD içeren Plütonik Kayaçlar, Foid-Siyenit, Foid-Monzodiyorit,Foid-Mcmzogabro, Foid-Diyorit/Foid-Gatno, Feldispatoidli Plütonik. Kayaçlar ve Karbonatitler, Foidolitler, Karbonatitler» Ultramafik Plütonik Kayaçlar

**DAMAR KAYAÇLARININ TANIMLANMALARI**

Mineralojik Bileşimleri Plütonik Kayaçlara Benzeyen Damar Kayaçları, Granitik Bileşimdeki Damar Kayaçları, Siyenitik. ve Monzonitik Bileşimdeki Damar Kayaçları,, Diyoritik. Bileşimdeki Damar Kayaçları, Gabraik Bileşimdeki Damar Kayaçları» Feldispatoidli Damar Kayaçları, Mineralojik Bileşim-

leri Plütonik Kayaçlara Benzemeyen. Damar Kayaçları.» Kalkalkalı Lamprofirler, Alkali. Lamprofirler, Alkali-Ultrabazik Lamprofirler

**VOLKANİK KAYAÇLARIN TANIMLANMALARI**

Riyolit ve Dasit,, Trakit, Laüt, Andezit, Bazalt, Fonolit,, Tefrit,, Foiditik Volkanik. Kayaçlar, Melilitit, Pikrit, Volkan-camlar,, Obsidyen, Pekştayn, Perit, Pimic, Takilit

**PİROKLASTİK. KAYAÇLARIN TANIMLANMASI**

Piroklastik Malzemenin Tanımlanması, Piroklastik Kayaçların Sınıflandırılması, Piroklastik Kayaçların Dokusal özelliklerine ve Mineralojik Bileşimlerine Göre Adlandırılmaları, Piroklastik Kayaçların Oluşum Şekillerine Göre Adlandırılmaları,, Piroklastik Kayaçların Bozunması

**LEVHA TEKTONİĞİ VE MAGMATİZMA**

Mot : Kitap Jeoloji Mühendisleri. Odası ve. H.Ü.. Jeoloji Mühendisliği Bölümü 06532 Beytepe/ANKARA adresinden temin, edilebilir..

# Jeoloji Takvimi

## 1998

### January

7-8 January 1998

**VOLCANIC AND MAGMATIC STUDIES GROUP ANNUAL RESEARCH IN PROGRESS AND THEMATIC MEETING** (Thematic sessions: Planetary Volcanism & Oceanic Volcanism: Processes and Products I, Gilbert Murray Hall, University of Leicester. Leicester, UK. (Contact: Andrew C. Kerr. Department of Geology. University of Leicester. University Road. Leicester, LE1 7RH. UK. Fax: +44\* 116 252 3639; E-mail: ack2@leicester.ac.uk; URL:

26-27 January 1998

# **REMEDIATION BY NATURAL ATTENUATION** (Training). Madison, Wisconsin, USA. (Contact: Mike Waxman. University of Wisconsin-Madison, 432 ISL Lake St., Madison, Wis. 53706. Tel: +1 800 462 0876; Fax: +1 608- 263 3160)

26-28 January 1998

# **LATIN AMERICAN MINING SUMMIT**. Miami, Florida, USA. (Contact: World Research Group, 7th floor, 1120 Avenue of the Americas, New York, N.Y. 10036. USA. Tel: +1 800 647 7600; Fax: +1 212 323 3237; E-mail: info@worldrg.com)

28-30 January 1998

**EXPLORATION METHODS '98: PATHWAYS TO DISCOVERY** (International Meeting following annual Cr. diller. Roundup?) Vancouver, Canada. Contact: BC and Yukon Chamber of Mines, Ann. Technical Chair, 841 West Hasting St., Vancouver, British Columbia, Canada V6C 1C9. Fax: 604 681 2363; WWW: <http://www.enrminet.ca/patway/MI>

28-30 January 1998

**SOCIETY OF ECONOMIC GEOLOGISTS** (International Meeting, with Exploration Methods '98), Vancouver, British Columbia, Canada. Contact: <http://www.v.eos.ubcc/pathways98>

31 January 1998

• **SWISS SEDIMENTOLOGISTS** (Annual Meeting), Fribourg, Switzerland. (Contact: Andre Strascher, Institut de Geologie, Pendles, 100 Fribourg, Switzerland. Fax: +41 26 300 9742; E-mail: andrestrasser@unifr.ch)

31 January-14 February 1998

• **VULCANOSPELEOLOGY** (International Symposium and Field Camps), Nairobi, Kenya. (Contact: Bruce Randall, 324 Questend Ave., Pittsburgh, PA 15228, USA. Tel: +1 412 344 0356)

### February

1-5 February 1998

• **TERTIARY TO RECENT LARGER FORAMINIFERA: THEIR DEPOSITIONAL ENVIRONMENTS AND IMPORTANCE AS PETROLEUM RESERVOIRS** (Conference and Workshop), Elf-Aquitaine Technical Centre, Pau, France. (Contact: Robert Loucks, ARCO EFT, 2300 W. Plano Parkway, Plano, TX 75075, USA. Fax: +1 972 538 3017)

5-8 February 1998

• **TERTIARY TO RECENT LARGER FORAMINIFERA: THEIR DEPOSITIONAL ENVIRONMENTS AND IMPORTANCE AS PETROLEUM RESERVOIRS** (Field Trip), Kairouan, Tunisia. (Contact: Robert Loucks, ARCO EFT, 2300 W. Plano Parkway, Plano, TX 75073, USA. Fax: +1 972 509 3017)

8-13 February 1998

• **GROUNDWATER—SUSTAINABLE SOLUTIONS** (Conference of IAH Australian Chapter), Melbourne, Australia. (Contact: Convention and Incentive Services, Level 2, 370 Glenroy Road, Ekteritwck VIC 3185, Australia. Tel: +61 3 9523 8290; Fax: +61 39528-4046; E-mail: cis@ozemail.com.au)

9-13 February 1998

• **OCEAN SCIENCES** (Meeting), San Diego, California, USA. Contact: American Geophysical Union, Meetings Dept, 2000 Florida Ave., Washington, DC, USA. Tel: +1 202 462 6900; Fax: +1 202 328 0566; E-mail: meetinfo@kosmos.agu.org; WWW: <http://www.sigu.org>;

15-19 February 1998

• **STATUS OF GLOBAL ENERGY RESOURCES** (Symposium), San Antonio, Texas, USA. (Contact: Don Hausen, 1767 South Woodside Drive, Salt Lake City, Utah 84124, USA. Tel: +1 801 277 4153; Fax: +1 801 277 0612; E-mail: mjoanh@aol.com)

23-25 February

• **AIRBORNE ELECTROMAGNETICS** (International Conference), Sydney, Australia. (Contact: Airborne EM Conference Secretariat, c/o Well Done Events, P.O. Box 1758, North Sydney, NSW 2057, Australia. Tel: 61 44 460 318; Fax: 61-44-460-319; E-mail: [judly@welldone.com.au](mailto:judly@welldone.com.au)

26-28 February 1998

• **GEOLOGICAL DYNAMICS OF ALPINE-TYPE MOUNTAIN BELTS**, Berne, Switzerland. (Contact: Prof. Dr. Albeit Matter, Geologisches Institut, Balizerstrasse KCH-3012 Berne Switzerland. \* Tel: +41 31 631 5767; Fax: +41 31 631 4843; E-mail: amatter@geo.uninc.ch)

### March

H-15 March 1998

• **OS E HISTORIES IN GEOTECHNICAL ENGINEERING** (International Conference), St. Louis, Missouri, USA. (Contact: Continuing Education, University of Missouri-Rolla, 103 ME A1W4, Rt. 11A, MO 65409-1S60, USA. Fax: 1 573 341 4992)

9-11 March 1998,

**INTEGRATED GEOPHYSICAL TECHNIQUES IN SEISMIC INTERPRETATION** (Seminar), Kristiansand, Norway. (Contact: Norwegian Petroleum Society, P.O. Box 1897 Vaka, N-0124 Oslo, Norway. Fax: 47 22 55 46 30; E-mail: kann.haugness@npf.no)

9-11 March 1998

• **SOCIETY FOR MINING, METALLURGY, AND EXPLORATION** (Annual Meeting), Orlando, Florida, USA. Contact: S.M.E. P.O. Box 625002, Littleton, CO 80112, USA. Tel: 1 800 763 3132; Fax: 1 303 979 346 h

10-13 March 1998

• **GEOCHEMICAL EARTH REFERENCE MODEL** (Workshop), La Jolla, California, USA. (Contact: E-mail: [germ@engpp.ucsd.edu](mailto:germ@engpp.ucsd.edu); WWW: <http://www-epves.lnl.gov/gennj>)

11-13 March 1998

• **INTERNATIONAL OIL AND GAS EXHIBITION AND CONFERENCE** (TÖGE '98), Ashgabat, Turkmenistan. Contact: Oil and Gas Division, International Trade and Exhibitions, Byron House, 12a, Shirlam Road, Umdun W9 2EQ, UK. Fax: 44 171 2860177; E-mail: [mil+gas@iic-group.com](mailto:mil+gas@iic-group.com)

16-18 March 2000

• **SEISMOWIGICAL SOCIETY OF AMERICA** (Annual Meeting), Boulder, Colorado, USA. (Contact: SSA, 201 Plaza Professional Bldg., El Cerrillo, CA 94530, USA; Tel: 1 310 525 5474; fax: 1 510 525 7204; B-mail: [smrw@seis.org](mailto:smrw@seis.org))

16-20 March 1998

**LUNAR AND PLANETARY SCIENCE** (International Conference), Houston, Texas, USA. (Contact: LeBecci, Simon, Conference Administration, LP1 Publications and Program Services Department, 3600 Bay Area Boulevard, Houston, TX 77058-1113, USA. Tel: 1 281 466 2158; Fax: 1 281 486 2160; E-mail: [simmons@lpjknasa.gov](mailto:simmons@lpjknasa.gov))

\* 22-24 March 1998

• **GEOLOGICAL CONFERENCE ON EXPLORATION IN MURZUQ BASIN**, Sebha, Libya. (Contact: Dr. Mustafa Sola, Organizing Committee, National Oil Corporation, P.O. Box 2655, Tripoli, Libya. Tel: +215 21 44 46181-9 ext. 2303; Fax: +215 21 333 1930)

24-26 March 199K

« **COAL SEAM GAS AND OIL** (Imemational Canfereicijc, Brisbane. Australia. 4Contact: I nl€amed i a Convention and! Event .Managem-ent.. P.O. Box .1280. Milton QLD 4064". Australia. Fax: 617 3369 0477; E-mail: csgo9K@im.com.auj

30 March-3 April 199«

• **RIOEROSION** (2nd Intraaional Workshop). Fort Pierce.. Florida. USA. ! Contact: Dr. Debra Krumm. Harbor Branch Océano-graphie Museum. 3600 U.S. 1 North., Fort Pierce. PL 34946, USA. Tel: +1 .561 463 2440. ex! : 428; Fax: +1 561 465 5743; E-mail: krumm@lboi.edu)

30 March-4 April 199«

• **WA TER ROCK INTERA CTION-9** f International Conference of International Association of Geochemistry and Cosmo-chemi'viry), Taupo, New Zealand. (Conlaci: B.W. Robinson, Secretary General. Tel: 64 737 48211 ; Fax: 64 737 48199; E - ofu i l : wri -9 @ g ns. c r i . n z ; WWW: http://ruamoko.gns.cri.n77wri-9)

Mi March-4 April 199«

• **AMERICAN SOCIETY FOR PHOTOGAMMETRY AND REMOTE SENSING-** (Meet ing), Tampa.. Florida, USA. (Contact: ASPRS. 5410 Grosvenor Lane, Suite 210.. Bethesda, MD 20814. USA.. Tel: ! 30! 493 0290)

## April

3-7 April 1998

• **PERSPECTIVES IN AMMO ACID AND PROTEIN GEOCHEMISTRY** (Conference). Washington. DC. USA, (Conlaci: Glenn A. Good friend., Geophysical Laboratory. Carnegie Institution of Washington. 5251 Broad Branch Ré., NW... Washington, .DC 20015-1305. USA.. Tel: 1 202 686 2410; Rix: 1 202 686 2419; E-l nai il : good lli e rid @.g l .c i w .e d u )

13-17 April 11998

**INTERNATIONAL SEDIMENTOWGICAL CONGRESS I ISlh>**, Alicante, Spain. (Contact: 15th Inernational Sedimentological Congress. Departamejilo de Ci c nias de! la Tierra y Medio Ambiente, Facultad de Ciencias, Campus de San. Vicente de Raspeig, Umveisidad de Alicanie. Aparado 99. 03081) " Alicante, Spain. Tel: 34 65903.552; Fax: 34 65903552; E-mai l : clierra @ vm.cpd. ua.es)

Li-17 April 1998

• **KIMNERUTESStSh** Inlcnlunational Conference). Cane Town. South Alneu fG ni tact: JI Guime>. 71KC. Depart me ni D' Geological Scievcv Tniicrsiily ol t ape Town, Private Bag. Kniulcbnsi'h 77U0. South Alnea. Tel: 27 21\*531 3162; Fax. 27 21 650 3783; K-nuil: 71KC(\*GE0LÜCY.UCr.AC./A; TRL h«p://www.uct.uc.«i/depls/iilL«Kci/7JK(7

14-18 April 1998

**GEOSCIENCE '98** (international Conference of the The GeologicuLSocieti., Ke-elc. UK. (Contact: Conference Department, The Geological Society, Burlington House., Piccadilly, London. W1V 0JX UK. Fax: 44 0171 439 8975; E-mail: conf#geolLwc.cityscapexo.uki

16-17 April 1998

**MAGMATISM AND MINERALIZATION IN ARCS AND OCEAN BASINS** (MutkliscipEinary Symposium, held as part of Geoscience \*98).. Keele University., Staffordshire, UK. ('Contact: Conference Department, The Geological Society, Burlington Hoy.se., London. W1V 0JU, UK.. Tel: 0171 434 9944; Fax: 0171 439 8975; E-mai l : harrisona@geolsoc.org.uk; WWW: h i t p : // w w w . g e o l s o c . o r g . u k )

19-22 April 1998

• **SITE CHARACTERIZATION** (ISC '98. International Confereoce), Atlanta. Georgia, USA. (Conlaci: Chair of Technical Affairs Committee, ISC '98. Prof. P.K. Robertson, Depf. of Civil Engineering, University of Alberta, Edmonton., Alberta T6G 2G7, Canada. Fax: 1 403 492 8198; • E - ma i l : p k r o b e r t s o n @ c i v i l . u a l s b e r t a x a )

19-23 April 1998

**COMPUTER APPUCATIONS M THE .MINERALS INDUSTRY-APCOM W** (27th (niernational) Symposium.)» London, UK. (Conlaci: Conference\*- Office. Institution of Mining and Metallurgy, 44 Portland Place, London W1N 4BR, UK. Tel: +44 (0)171 580 3802; Fax: +44 (0)171 436 5388; E-mail: 106115.23B @ CompuServe.com)

20-22 April 199«

**GEO '98** (Middle East Geosciences Exhibition and Conference). Manama, Bahrain. (Contact: Stephen Key, Arabian Exhibition Management WLL,"P0 Box 20200, Manama., Bahrain.. Tel: 973 550033; Fax: 973 553288)

20-22 April 1998

• **13TH HIMALAYA-KARAKORAM-TIBET INTERNATIONAL WORKSHOP(HKTW)**. Peshawar, Pakiřian.(Cumaci: M. Asif Khan & M. Qasim Jan, National Centre of Excellence in Geology., University of Peshawar» Peshawar."Pakistan., Tel: (92)91 44367., 43180; Fax: i:92) 91 431K0. 4!1979; E-mail: hkl 13<&uop.psw.eram.com.pk)

20-23 April 1998.

**HYDROLOGY, WATER RESOURCES AND ECOLOGY IN HEADWA "FEES** (I r i t e r n a t i o n a l I n H e d i s e i p i i n a r y C o n l " c r e n o e ! - H e a i i W a t e r '98), Merano, Italy.. (Contact: HeadWaler "VÁ c/o European Acadeny, Weggensieiastrasse 12/A, I-39J (30 Bozen/Bolzano. Italy. Tel: 39 471 30 61 I !.: Fax: 39 471 30 6099; E-mail: He ad! Water98 @'ins .s i n .f o , i n t e r b u s i ; n e s s , i t )

2Ü-24 April 1998

• **EUROPEANGEOPHYSICALSOCIETY** (General Assembly). Nice, France. (Contact: EGS Office, Max-Planck-Slr. 1, 37191 Kalleriibu.rg-Liuidlau, Germany: Fax: 49 5,5564 4709; E-mail: egs@linax.l.mpa.e.gwg.de; WWW: http://Avvw.Di|3ac.gwdg.de/EGS/EGS.html)

27-30 April

• **MODERN PREPARATION AND RESPONSE SYSTEMS FOR EARTH-QUAKE, TSUNAMI AND VOLCANIC HAZARDS** (I Dternational Conference), Santiago, Chile. (Contact: Bruce A. Bolt. De pi. ofGetitology and Geophysics, University of California» Berkeley, CA 9472Ü, USA: Fax I 510 845 4816; É-maii: bo l l u c - @ s o c r a t e s . b e r k e l e y . e d u ; a r L Gutierrez, last. Geografica Militar. Santiago. Chile; Fax: 56 2 698 H278; E - m a i l : s e i s m i l c @ c o m f . d i g i t a l c h i l e x i l

29 April-4 May 199S

• **PR&-VARISCAN TERRANE ANALYSIS OF GONDWANAN EUROPE**, Dresden, Germany. (Coin t act: Bernd D. Erdmann; TU Berlin., Instiitut für Andewndte Geologie IL Ensi-feuther-Plaiz 1. Sekr. EB 10. D-10587 Berlin, Germany: Fax: +49 30 314 21 ÜÜ; E-ina! l : e r d t O 9 3 6 @ m a i l s A r 2 J t r z . ü J - b e r l . i i v d e p

## May

3-7 May 1998

• **MINING, METALLURGY AND PETRO-LEUM'**, Montreal. Quebec. Canada., (Contact: 'Chajöial Murphy.. Caiiadio. Institute <o7 Mining. Metallurgy and Petroleum, 3400 de Maisonneuve Blvd. West., Suite 1210, Montreal, Quebec H3Z 3B8. Canada.. Tel: I 514 939 2710; Fax: I 514 939 2714; E- ma i l : c m e i n i @ l o g i n . n e t )

12....15 May 1998

• **WATER QUALITY**, Wuhan. China. (Contact: Prof., Xia. Jura. Local Organizing Coiraiiittee. Internal kin al Workshop /nn Bamters to Sustainable Mariagenien! of W al e r Quantiiy and Quality. Wuhan University of Hydraulic and Electric Engineering, No. 8 Southern Road of East Lake .. Wuhan 430Ü72. China. Tel: 86 27 <313302: Fax: 86 27 7878.318; E-Tfaiil : jxia:a@syn2(). wuhec.eda.cii|

12-16 May 1998

• **CRETACEOUS'PALEOGENE TRANSITIONS IN TUNISIA (K-TBOUNDARY)** (Imtraaional Workshop and Fiiid. Excursion) Tunis. Tunisia, Jointly spcnsored by the International Commission on Stratigraphy CICSi and the Geological Survey of Tunisia. (Contact: Dr. Gerta Keller., Département of Geosciences., Princeton University, Princeton NJ 08544., USA. Tel: 609 25< 4117; Fax: 609 258 1671; E-mail: k e l l e r @ g e o . p r i n c e t o n . e d u l

14-18 Way 1998

• **UNKING SPATIA L AND TEMPORAL SCALES IN PALEOCOWGYAND ECOLOGY** CPenrose Conference of the Geological Society of America!, Solomons. Maryland., USA. i Contact: Andre vv Cohen. Department of Geosciences., Uimiveriily of Arizona. Tucson. AZ K5721. USA. Tel: t 520 621 4691; Fax: I 520621 2672; E-mail: • i i c o h e n # g e o . a r i z o m a . , e t l u )

J5-21 May 1«

**LOESS IN ARGENTINA: TEMPERA TE AND TROPICAL**. Inernational Joint Meetins....INQU'A Loess, Commission/ PASM/CIJ.P. CofUac: Dr. Martin Iripido/Danieki Krohling. Fax: +54-42-571143; F-mail: • KM [RIONDCB'ARCRIDE.EDU. AR)

17.20 May 19951

• **SOCIETY FOR SEDIMENTARY GEOLOGY** (Annual Meeting, in conjunction with AAPG). Sail Lake City, Utah. IISA, (Contact: SEPM, 1731 E. Tjst St... TUISL OK 74136., USA; Tel: 1 800 865 9765; WWW: htiiiffsepm.tulsa .net )

17-20 May 1W»

**AMERICAN ASSOCIATION OF PETRÖ-IJEUM GEOLOGISTS** (A«inual Meeting» Satt Lake City, Utah, USA. tCwiiac: AAPG Conventions Department. P O Box. 979. 1444 S Boulder Ave., Tutsa. OK 74H)f-0979. USA. Tel:+1 918 360 2679; Fax:+1 9J8 560 2684; • • E-mail: dkeiui(#aapgiorg)

1:8-20 May 1998.

- **QUEBEC 1998** (Joint Meeting of Geological Association of Canada, Minenölogical Association of Canada, and Association Professionnelle des Géologues, et des Géophysiciens du Québec), Quebec, Canada. (Contact: Agathe Marin, Department of Geology, Université Laval, Pavillon Aértem-Pbulioi, Sainte-Föy, Quebec G1K 7P4, Canada. Tel: 1 418.656 2193; Fax: 1 418 6.56 7339;. E-mail: quebec1998@ggl.ulavai.ca; WWW: <http://www.ggl.ulavai.ca/quebec1998/hlinl>)

2:6-29 May 1998

- **AMERICAN GEOPHYSICAL UNION** (Spring Meeting), Boston, Massachusetts USA. (Contact: AGU Meetings Dept., 1998 Spring Meeting, 2000 Florida Ave., MW, Washington, DC 20009, USA. Tel: 1 202 462 6900; Fax: 1 202 328 0566; E-mail: nKetingitfo@ko5arosuiigu.org; WWW: <http://www.agu.org>)

27-29 May 1998

- **GEOLOGICAL SOCIETY OF GREECE** (International Congress), Patra, Greece. (Contact: 0. Soldatou, University of Patra, Department of Geology, P.O. Box 1421 -261, Ü Patra, Greece)

27-30 May 1998

- **GROUND-PENETRATING RADAR '98** (International Conference), Lawrence, Kansas, USA. (Contact: Richard Plumb, Electrical Engineering and Computer Science, Radar Systems and Remote Sensing Laboratory, The University of Kansas, 229,1 Irving, Hill Road, Lawrence, KS 66045-2969, USA. Tel: 1 913 864 7735; Fax: 1 913 64 7789; E-mail: gpr98@rsl.ukans.edu; WWW: [www-sl.ukans.edu/~gpr98](http://www-sl.ukans.edu/~gpr98))

27-31 May 1998

- **SOCIETY AND RESOURCES MANAGEMENT** (international Symposium), Columbia, Missouri, USA. (Contact: Sandy Rifcoon, ISSRM Co-Chair, University Building 108, Columbia, MO 65211, USA; Tel: 1 573 882 0861; Fax: J 573 852 1473; E-mail: srsjr@muocnial.jnissouri.edu)

31 May-4 June 1998

- **SEISMIC DESIGN AND MITIGATION FOR THE THIRD MILLENNIUM' CUS**, National Conference-on Earthquake Engineering, Seattle, Washington, USA. (Contact: Earthquake Engineering Research Institute, 499 14th St., Suite 320, Oakland CA946J2-1934, USA; Tel: 1 510451 0905; Fax: 1 510 451 5411; E-mail: eeri@een.ocg)

## June

1-3 June 1998

- **FIRST INTERNATIONAL CONFERENCE ON GEOSPATIAL INFORMATION IN AGRICULTURE AND FORESTRY: Technology, Applications, and Decision Support**, Disney's Coronado Springs Resort, Lake Buena Vista, Florida, USA. Organized by ERIM with sponsors that include U.S. Department of Agriculture, Ecol Science and Technology and Modern Agriculture Magazine. (Contact: ERIM Agriculture Conferences, Box 134001, Ann Arbor, MI 481134001 USA. Tel: +1 313 994 1200. ext. 3234; Fax: +1 313 9945123; E-mail: wallman@erim.org)

1-4 June 1998

- **PAN AMERICAN CURRENT RESEARCH ON FLUID INCLUSIONS (IBERNATIONAL CONFERENCE, PACROFIVII)**, Las Vegas, Nevada, USA. (Contact: Jean S. Oine, Dept of Geosciences, University of Nevada, Las Vegas, Nevada 89154401a USA. Fax: +1 702 895 4064; E-mail: jcjine@nevadaxdu)

1-5 June 1998

- **INTERNATIONAL CONFERENCE ON PRECAMBRIAN AND CRATON TECTONICS** (14th. International Conference on Basement Tectonics), Ouro Preto, MG, Brazil. Sponsored by Departameato de Geologia Escola de Minas, Universidade Federal de Ouro Preto, Brazil and International Basement Tectonics Association. (Contact: E-mail: basement98@de.geo.iifop.hr)

3-5 June 1998.

- **ROCK MECHANICS** (ISRM International Symposium), Rock Mechanics, Earth: Grast Mechanics, Caacuo (Quintana Roo), Mexico. (Contact: Sociedad Mexicana de Mecanica de Rocas, Camino a Santa. Teresa No. 187, Col. Bosques del Pedngal, MEX-1,4020 Mexico, D.F., MEXICO. Tel: +52 5.5282089 falso fax); E-mail: asgjmranrreintmex.coin)

4-12 June 1998

- **EVOLUTION OF OCEANIC ISLAND VOLCANOES** (Fenrose Conference of the Geological Society of America), Galapagos Islands, Ecuador. (Contact: Dennis J. Geist, Department of Geology, University of Idaho, Moscow, ID 83.844, USA. Tel: 1 208 8.85 6491; E-mail: dgdst@udabo.edu)

7-13 June 1998

- **EUROPEAN ASSOCIATION FOR CONSERVATION OF GEOLOGICAL HERITAGE (PmGEO) MEETING '98**, Bulgaria (Contact: Dr. Todor Todorov, Sofia 1113, P.O. Box 121, Tel: +359 2 713 2271 ; Fax: +3.59 2 75 91 04; E-mail: todorov@geology.acad.bg or uptech@ttra.bg)

8-11 June 1998

- **GLOBAL WARMING** (International Conference and Expo), Hong Kong, China. (Contact: World Resource Review, 22W381 75th Street, Mapleville, Illinois, USA. 60565-9245; Fax: +1 630910 1561)

8-12 June 1998

- **EUROPEAN ASSOCIATION OF GEOSCIENTISTS AND ENGINEERS** (EACE, 60th. Conference), Leipsig Germany. (Contact: EACE, E.H. Bornkamp, TO Box. 298, Ní 3700, AG Zeisl, The Netherlands, Tel: 31,0069 62 655; Fax: 31/3069 62.640)

16-20 June 1998

- **PACIFIC CONGRESS ON MARINE SCIENCE AND TECHNOLOGY: TOWARDS THE 21ST CENTURY—A PACIFIC ERA** (8th International), Seoul, Korea. (Contact: N. Saxena, PO Box 11568, Honolulu, HI 96828. USA. Tel: +1 808-956-6163; Fax +1 808-956-2580; E-mail: saxena.wikiiki.eng.nawaii.edu)

23-27 June 1998

- **PERMAFROST** (7th International Conference, co-sponsored by the International Permafrost Association), Yellowknife, NWT, Canada. (Contact: i.A., Heginbottom, Geological Survey of Canada, 601 Booth Street, Ottawa, Canada K1A0E8. Tel: +1 613 992 7813. Fax: +1 613 992 2468; E-mail: permafrostconference@gsc.nrcan.gc.ca; WWW: [http://www.nrcan.gc.ca/gsc/perim.af\\_e.html](http://www.nrcan.gc.ca/gsc/perim.af_e.html))

24-26 June 1998

- **EUROPEAN CONODONT** (international Symposium), Bologna and Modena, Italy. (Contact: M.G Ferri, Dipartimento di Scienze della Terra e Geologico Arabien tall. Via Zamboni 67, 40126 Bologna, Italy. Fax: 39 51 354522; E-mail: pem@geomin.unibo.it)

2:4-27 June 1998:

- **MINERAL AND THERMAL GROUND-WATER** (International Symposium, off the Romanian Association of Hydrogeotologists/IAH), Miercwea Que, Romania. (Contact: Romanian Association of Hydrogeologists, Symposium Secretariat, c/o Julian Popa (Executive Secretary), 6 Traian Vuia Str., R-70139 Bucharest, Romania. Tel/Fax: +40 12123385)

25-26 June 1998

- **FLOODPLAINS '98, Norwich UK**. (Contact: Dr. Jan\* Alexander, School of Environmental Sciences, The University of East Anglia, Norwich, NR4 7TJ, UK, E-mail: j.atexander@uea.ac.uk; or Sue Marriott, School of Environmental Management and Geog.raphy, University of the West of England, Coldharbour Lane, Bristol, BS16 1QY, UK, E-mail: s-marrio@uwe.ac.uk)

28 June-5 July 1998

- **EVENT STRATIGRAPHY OF GONDWANA** (Gondwana International Symposium), Cape Town, South Africa. (Contact: Organising Committee, Gondwana 10, Department of Geological Sciences, University of Cape Town, Rondebosch, South Africa. Tel: 27 21650 3171; Fax: 27 21650 3167; E-mail: gondwana@geology.tict.ac.za)

29 June-2 July 1998

- **CARIBBEAN GEOLOGICAL CONFERENCE** (15th International Conference), Kingston, Jamaica. (Contact: Dr. Trevor Jackson, c/o Department of Geography and Geology, University of the West Indies, Kingston 7, Jamaica. Fax: 809927 1640)

29 June-15 July 1998

- **INTERNATIONAL PIA TINUM SYMPOSIUM** (14th, IAGODCMUR), Johannesburg, South Africa. (Contact: Dr CA. Lee, PO Box 68108, fiiyanston, South Africa. Tel: 1127 373 2580; Fax: 1127 836 0371; E-mail: dee@amplaisxovza)

## July

4-11 July 1998

- **PROCESSES OF CRUSTAL DIFFERENTIATION** (Penrose Conference: of the Geological Society of America), Verbania, Italy. (Contact: Tracy Rushmer, Department of Geology, University of Vermont, Burlington, VT 05405. USA. Tel: 1 802 6.56 81136; Fax: 1. 802 6560045; E-mail: trushmer@zoo.uvm.edu)

- 6-8 July 1998
- *PAMEODIVERSIFICATIONS, IANB AND SEA COMPARED*, Lyon., France. (Contact: Mireille Gayet, UFRdes Sciences de la terre, Université; Claude Bernard, Lyon I, 27-43 bd du 11 novembre 1911, 69622 Villeurbanne cedex, France. Tel: +33 4 72 44 83 98; Fax: +33 4 72 44 84 36; E-mail: gayec@uiv-lyon1.fr; or lystane.thevenod@uiv-lyon1.fr)
- 6-8 July 1998
- *GEOGRAPHICAL INFORMATION SYSTEMS* (International Conference). Udine, Italy. (Contact: Liz Kenr, GIS 98 Conference Secretariat, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton SO40 7AA, UK. Tel: 44 1703 293 223; Fax: 44 1703 292 853; E-mail: liz@wessex.ac.uk; WWW: <http://www.wessex.ac.uk>)
- 6-10 July 1998
- *AUSTRALIAN GEOLOGICAL CONVENTION*, Townsville, Australia. (Contact: Debbie Buckley, School of Earth Sciences, James Cook University, Townsville QLO 4811, Australia. Tel: 077 81 5047; Fax: €77 25 1501; E-mail: jcuxdu.au; WWW: <http://www.jcu.au/dept/Earth/AOC!4Jitmt>)
- 6-10 July 1998
- *HYDROLOGY IN A CHANGING ENVIRONMENT* (International Symposium of the British Hydrological Society). Exeter, UK. (Contact: Brace Webb, Department of Geography, University of Exeter, Exeter\* EX4 4RJ, UK. Fax: +44 (0) 13392 263342; E-mail: B.W.Webb@exeter.ac.uk)
- 8-10 July 1998
- GECONGRESS\*98* (Conference of the Geological Society of South Africa). Pretoria, South Africa. (Contact: Tel: 27 12 8411167; Fax: 27 12 8411221; E-mail: eaucamp@geosci.enoe.org.za)
- 8-17 July 1998
- *CRYOSOLS* (Congress of International Society of Soil Science), Montpellier, France. (Contact: Dr. D.A. Gilichinsky, Institute of Soil Science and Photosynthesis, Russian-Academy of Sciences, 124292 Pushchino, Moscow region, Russia. E-mail: gilltchin@issp.serpukhov.su)
- 11-17 July 1998
- IA VCEI INTERNATIONAL VOLCANOLOGICAL CONGRESS '98*, Rondebosch, South Africa. (Contact: Secretariat, IA VCEI 1998, Dept. of Geological Sciences, University of Cape Town, Rondebosch, South Africa. Fax: 27 21 6503783; E-mail: ivc98@geology.uct.ac.za; WWW: <http://www.yci.ac.za/depts/geolsci/ivc98/>)
- 12-15 July 1998
- *THE BATHURST MEETING*. Cambridge, UK. (Contact: Dr. J. A. D. Dickson, Dept of Earth Sciences, University of Cambridge, Downing St., Cambridge, CB2 3EQ, UK. Tel: +44 (0)1223 333400; Fax: +44 (0)1223 333450; E-mail: jaddl@esc.cam.ac.uk)
- 12-16 July 1998
- *FUTURE GROUNDWATER RESOURCES* ArAf5JT(FGR-98) (2nd International Conference), Changchun, China. (Contact: Dr. Zhao Yongsheng and Dr. Sui Weiguo, FGR '98 Conference Secretariat, PO Box 298, Changchun University of Earth Sciences., 6 Ximinzhn Street, Changchun, Jilin 130026, China. Fax: #86431 892 8327)
- 15-22 July 1998
- IGCP PROJECT 420 WORKSHOP* (Continental growth in the Phanerozoic: Evidence from Easi-CemSml Asia) (with field; excursion in the Altai Mountains) Oramqi, China. (Contact: Prof. Hong, Dawei, Institute of Geology, CAGS, 26 Baiwanzhoang Road, Beijing 100037, China. Tel: 86 106831 1133 ext. 2309; Fax: +6 10 6831.0894. or Prof. Bor-ming Jahn, Geosciences Rennes, Université de Rennes 1, 3.5042 Rennes Cedex, France. Tel: 33-2-99 28 60 83; Fax: 33-2-99 28 67 72 or 33-2-99 28 67 80; E-mail: jahn&umv-rennes1ir)
- 21-25 July 1998
- *WESTERN PACIFIC GEOPHYSICS* (Meeting), Taipei, Taiwan, China. (Contact: American Geophysical Union, Meetings Dept., 2000 Florida Ave., Washington, DC, USA; Tel: 1 202 462 6900; Fax: 1 202 328 0566; E-mail: im.eeiinginfo@kos.mos.agu.org; WWW: <http://www.agi.l.org>)
- 27-31 July 1998
- *THE METEOMICAL SOCIETY* (Annual Meeting), Trinity College, Dublin, Ireland. (Contact: Ian Sanders, Department of Geology, Trinity College, Dublin 2, Ireland. Tel: +3.53 1 6081252; Fax: +3.53 1 6711199; E-mail: isanders@tcd.ie)
- 29-31 July 1998
- *OIL AND HYDROCARBON SPILLS: MODELLING, ANALYSIS AND CONTROL* (International Conference, OIL SPILL '98), Southampton, U.K. (Contact: Helen Fisher, OIL, SPILL '98 Conference Secretariat, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton SO40 7AA, UK. Fax: +44 1703 292 853; E-mail: lifisher@wessex.ac.uk)
- ## August
- August 1998
- IAGOD SYMPOSIUM* Oodi. Broken Hill, Australia. (Contact: Professor I.R. Pltmer, University of Melbourne, Parkville, VIC 3052, Australia. Tel: 613 3446520; Fax: 613 3447761)
- August 1998
- EUROCK \*98* (ISRM Regional Symposium), "Rock Mechanics in Petroleum Engineering\*", Trondheim, Norway. (Contact: Prof. Rune M. Holt, Dept of Petroleum Technology and Applied Geophysics, NTH, N-7034 Trondheim, Norway. Tel: +4773 591187; Fax: +47 73 591102; E-mail: rune.holi@iku.sintef.no)
- 4-8 August 1998
- *MODERN APPROACHES TO ORE AND ENVIRONMENTAL MINERALOGY*. Ottawa and Guelph, Ontario, Canada. A Short Course sponsored by the Mineralogical Association of Canada, Natural Resources Canada, The Commission on Ore Mineralogy, and the International Mineralogical Association. Limited registration as the course will focus on specialized laboratories available in the Booth Street area. (Contact: Louis J. Cabri, CANMET, 55.5 Booth Street, Ottawa, Ontario, Canada, K1A 0G1. Tel: +1 6S3 995 4073; Fax: +1 6S3 996 9673; E-mail: lcabri@nrcan.gc.ca)
- 9-12 August 1998
- *ENVIRONMENTAL GEOTECHNOLOGY* (International Symposium), Boston, Massachusetts, USA. (Contact: H.I. Inyang, 4th International Geoenvironmental Symposium. CEEST, James IB. Francis, College of Engineering, University of Massachusetts-Lowell, One University Ave., Lowell, MA 01854, USA. Tel: 1 508 934 2285; Fax: 1 508 934 3092; E-mail: inyangti@woods.um1.edu)
- 9-15 August 1998
- INTERNATIONAL MINERALOGICAL ASSOCIATION: IMA '98* (17th General Meeting) Toronto, Canada. (Contact: Professor A.J. Naldrett, Department of Geology, University of Toronto, Canada M5S 3B1. Tel: (461) 978 3030; Fax: (416) 978 3938; E-mail: ima98@quartz.geology.utoronto.ca)
- 10-16 August 1998
- *GENERATION AND EMPLACEMENT OF OPHIOLITES THROUGH TIME* (International Symposium and Field Excursion). Oulo, Finland. (Contact: J. Vuollo, Department of Geology, University of Oulu, FIN-90570 Oulu, Finland. Fax: 358 81 5531 484; E-mail: vuollo@sveka.oulu.fi)
- 15-20 August 1998
- *HISTORY OF OCEANOGRAPHY* (International Congress), Qingdao, China. (Contact: G.-K. Tan, First Institute of Oceanography, SÖA, 3A Hoagdao Branch Road, Qingdao 266003, China. Tel: 86532 28883127; Fax: 86532 2S79562; E-mail: ftokjc@nsjocLsd.cn)
- 17-19 August 1998
- *EARTH SCIENCE IN SUPPORT OF GROWING SOUTHEAST ASIAN ECONOMICS* (GEOSEA '98, International Congress), Kuala Lumpur, Malaysia. (Contact: Geological Society of Malaysia. c/o Department of Geology, University of Malaya, 5060.3 Kuala Lumpur, Malaysia. Tel: 603 757 7036; Fax: 603- 756 3900; E-mail: geologi@pojari.ng.my)
- 17-20 August 1998
- THE JURASSIC SYSTEM* (5th International Symposium), Vancouver, Canada. (Contact: P.I. Smith, Earth and Ocean Science, University of British Columbia, 6339 Stores R&, Vancouver, BC, V6T 1Z4 Canada. Tel: (604) 822-6456; Fax: (604) 22 6088; E-mail: psmith@eos.ubc.ca; WWW: <http://www.eo&.ubcxa/junissic/annHiince.htm>)



17-20 August 1998

- **GLACIERS AND THE GLACIATED LANDSCAPE** (International Symposium). Kiruna, Sweden. (Contact: Secretary General International Glaciological Society, Lensfield Road, Cambridge CB2 1ER. UK. Tel: 44 1223 355974; Fax: 44 1223 336543;. E-raail: 1:00751.1667@compuseive.com)

20-26 August 1998

- **ICOG-9: GEOCHRONOLOGY, COSMO-CHRONOLOGY AND ISOTOPE GEOLOGY** (9th International Conference). Beijing, China. (Contact: ICOG-9 Secretariat.. Chinese Academy of Sciences» 26 Barwanzhiang Road ., Beijing 100037, China. Tel: +86 10 68311545' or 68326456; Fax: +86 1068311545)

20-26 Aueusi 1998

- **CR.YOSOLS AND THEIR RELATIONSHIP TO GLOBAL CUMATE CHANGE (World Congress of Soil Science, Symposium 39)**, Montpellier, France. (Contact: Agropolis-Avenae. Asiropolis.-34394, Montpellier., Cedex. 5, France. Tel: 53 6704 75.3«;. Fax: 33 6704 7549)

23-28 August 1998

- **PALEOCEANOGRAPHY** (6th International Conference). Lisbon, Portugal. (Contact: Fairraa- Abramtes» Assoc. Portu.gu.esa de Paleocanografia. Apt. 7618 Alfragi.de, 2700 Amadora, Lisbon, Portugal. Tel: 351 1 346 3915; Fax: 351 1 342 4609; E-mail: icpofatima@mail.telepac.pt)

24-25 August 1998

- **SOCIETY FOR ORGANIC PETROLOGY** (Annual Meeting), Halifax, Nova Scotia» Canada.. (Contact: Prasanta K. Mukhopadhyay. Tel/Fax: 1 902 453 0061 )

25-28 August 1998

- **INTERNATIONAL SYMPOSIUM ON URBAN WATER RESOURCES IN THE 21ST CENTURY (ISUWR'98)** Beijing, China. Sponsored by Beijing Association for Science & Technology (Contact: Chinese Academy of Geological Sciences, 26 Baiwanzhuang Road, Beijing 100037. China. Tel/Fax: +86-10-6832 6186; E-mail: geophy@bj.col.com.cn)

27-30 August 1998-

- **UNSA TURA TED SOILS** (Enter national Co n feren.ee ). Beijing .China. (Co n tact : G uo-nan Liu, Geotechnical Division, China Academy of Railway Sciences. Beijing 100081. China. Fax: +86 10 6225 6572)

31) Auguii-2 September 199«.

- **17TH CONGRESS OF THE CARPATHIAN-BALKAN GEOLOGICAL ASSOCIATION**, Vienna, Austria. (Contact: Dr. Werner Janoschek. Geological Survey of Austria, Rasumofskygas&e 23. A-1031 Vienna, Austria. Tel: +43 1 71.2 56 74 43; Fas: +43 1 71.2 56 74 56; E-mail: wjariosehek@cc.geolte.ac.at)

30 August-3 September' 1998

- **V.M GOLDSCHMIDT CONFERENCE** «8th, Annual, of The Geochemical Society). Toulouse. France.. (Contact: E- m a i l . : go Me onf# I u c i d i . tips-1.1 se A : "r: WWW: http://www.obs-mip.fr/onip/umr5563/goldcon'98.htm 1 )

30 August-4 September 1998

- **CLAY MINERALOLOGY AND PETROLOGY** (International Conference and Workshop of S.GCP Project No. 4G5), Brno, Czech Republic. (Contact: Petr Sulovsky, Dept. of Mineralogy, Petrology, and Geochemistry, Faculty of Science., Masaryk University, Kotk&Bka 2, CZ 611 37 Brno, Czech Republic. Fax: 420' 54121.1214; E-mail: clays@sci..mMni.cz)

## September

September-1998

- **SEDIMENTARY ROCKS (International Symposium)**, Taipei, Taiwan., China.. (Contact: Dr. Ou Chin Der, Director General., Taiwan Area. National Expressway Engineering Bureau, Ministry of Transportation and Communications, Taipei Taiwan., China. Tel: +SS6 2 5156777; Fax: +886 2 5041281 )

M 2 September 1998

- **ANATOMY AND TEXTURES OF OKK-BEARING GRANITIDS OF SIKHOTE-AUN (PRIMORYEREGION, RUSSIA) AND RELATED MINERALIZATION** (Joint; Field Conference of IAGOD, IGCP-373, SG A, and Russian Academy of Sciences), Vladivostok., Russia. (Contact: Dr. Galina Gonevchuk, Far East Geological institute of FEB of Russian Academy of Sciences, 159., Prospect 100-letya, Vladivostok., 690022», Russia.. Tel: 7 4232 318 750; Fax: 74232 31 78 47; E-mail: fegi@onluiejnarine.su; WWW: http://www.immr.tu-ctauslhaLde/lager/announcement 1 .html)

5-9 September 1998

- **ANTARCTIC GLACIOLOGY, Lanzhou, China.** (Contact Secretary General of JSAG-6. Laboratory of Ice Core and Cold Regions Environment, Lanzhou Institute of Geology and Geocryology, CAS., Lanzhou 730000, China. Fax: 86931 8885241; E-mail: icecore@ns.lz>.ae.en)

'6-1 i September 1998

- **EARTHQUAKE ENGINEERING** (International Conference), Paris. France. (Contact: French Association for Earthquake Engineering., 4 Avenue du Recteur Poincare, 75782 Paris Cedex 16. France. WWW: http://dfc2.enpc.r/cecel 11

6-16 September 1998

- **DEPOSIT AND GEOENVIRONMENTAL MODELS FOR RESOURCE EXPLOITATION AND ENVIRONMENTAL** SECI/JE17T (International Conference: of NATO Advanced Study Institute), Matrahaza, Hungary.. (Contact: Dr. A.G. Fabbri, Intern. InsL for Aerospace Survey & Earth Sciences (ITC), Hengelosestr 99, PO Box 6., 7500 AA Enschede, The Netherlands. Fax: 31-53-487-43.36; E-mail: fabbri@iitc.nl.; Co-Director Dr. G. Gaál» Hungarian Geological Survey, Budapest. Hungary 971295)

7-9 September 1998

- **SEDIMENT TRANSPORT AND DEPOSITION BY PARTICULATE GRAVITY CURRENTS** (Conference). Leeds, UK., (Contact: Ben Kneller. Earth Sciences Department., University of Leeds, Leeds, LS2 9IT, UK. Tel: +44 113 233 6625; Fax: +44 113 233 5259; E-mail: ben@earth.leeds.ac.uk; WWW: http://zeath.leetkuc.ukAurhklitics/conference Jitrii )

7-10 September 1998

- **DRINKING WATER CONTAMINATION** (International Conference of International Association of Hydrological Sciences), Santiago» Chile. (Contact: Eric G. Reichard, U.S. Geological Survey, 5735 Kearny Villa Road, Sie. O, San. Diego, California 92123, USA. Tel: 1 619 637 6834; F «: 1 619 637 9201; E-mail: egreich@usgs.gov)

7-11 September 1998

- **EARLY WARNING SYSTEMS FOR THE REDUCTION OF NATURAL DISASTERS** (Conference), Potsdam, Germany. (Contact: E-mail: ewc98@gfz-potsdam.de)

9-11 September 1998

- **REMOTE SENSING** (Annual Conference, Natural Resource Institute and University of Greenwich), Kent. UK. (Contact: RSS98. School of Earth and Environmental Sciences». University of Greenwich., Medway Towns Campus, Chatham Maritime., Kent ME4 4A.W, UK. Tel: 44 0181 3319803; Fax: 44 0181 3319805; E-mail: r\$98@gre\*ac.uk)

10-20 September 1998

- **IGCP PROJECT 367 (FINAL MEETING) AND INQUA SHORELINES AND NEOTECTONICS COMMISSIONS**, Corinth and Santos, Greece. (Contact: Stathis Sums. Inst. of Geology and Mineral Exploration. 70 Mesoghion St., Athens 11527, Greece; Phone 30 1 771 5522; Fax: 30 1 775 2211; E-mail: stiros#prometheus.hol.gr; Paolo Antonio Pirazzoli., CNRS. URA 141-Lab de Géographie Physique» 1 Pl. Aristide Briand. 92190 Meudon-Bellevue, France.. Tel: 33 S 4507 5558; Fax: 33 1 4507 5830; E-mail: pkazzol@cnrs-bellevue.fr)

1.1-14 September 1998

- **ASSOCIATION OF EARTH SCIENCE EDITORS** (32nd Annual), Council of Biology Editors, and Association of European Science Editors (Joint Meeting), Washington, DC, USA. (Contact: Arty Allen, Sheridan Electronic Systems. Suite 832.400 E. Pratt Si...Baltimore, MD 21202, USA. Fax: +1 410 347 1641; E-mail: aal.ien. @ ses .she dan .com )

13-15 September 1998

- **PETROLEUM GEOLOGY AND HYDRO-CARBON POTENTIAL** (Conference). Neptune/Constanta. Romania.. (Contact: Dr. Akif A., Narimanov, Azerbaijan Society of Petroleum Geologists. Tel: 0099412 92 3511; Fax: 0099412 92 3297; E-mail: Akifnar@Soc.ar.baku.ax)

13-1,7 September 1998

- **ENVIRONMENTAL AND ENGINEERING GEOPHYSICS** (4th International Conference), Barcelona, Spain. To receive the First Announcement send E-mail, request. (Contact: Unis Rivera. Assº, of Applied Geophysics, Faculty of Geology., University of Barcelona, Barcelona. 08071. Spain. Tel: 34-3-402.14.30; Fax: 34-3-402.13.40; E-mail: riveto@nalura.geob.es. )

14-17 September 1998

- **MODERN EXPLORATION AND IMPROVED OIL AND GAS RECOVERY METHODS** (2nd International Conference), Krakow. Poland. (Contact: DEXTER Congress and Symposium. Bureau, Wroctaw.s.fca 37A. 30-0! il Krakow.. Poland.. Tel: 48 12 340 «08; Fax: 48 12 336313; E-mia:il: kongrexy@dexier.kr;akow.pl! )•

21-23 September 1998

- **EPICONTINENTAL TRIASSIC** (Symposium)» Halle, Germany. (Contact: Gerhard Beutler, Institut für Geologische Wissenschaften und Geiseltalmuseum, Domstr. 5, D-06E08 Halje/oaaf, Germany. Fax: 49 0 345 55 27 178)

21-25 September 1998

- **INTERNATIONAL ASSOCIATION OF ENGINEERING GEOLOGY** (8th International Congress).. Vancouver, Canada. (Contact: Kim Meidal, Secretariat, 8th Congress I AEG, c/o BC Hydro, 691:1 Southpoint Dr., Burnaby, BC V3N 4X8, Canada. Tel: J 604 528 2421; Fax: 1 604 525 255; E-mail: ktm.meidal@bhydro.bc.ca; WWW: http://www.bhydro.bc.ca/buhyciro/IAEG/IAEG98.html)

21-25 September 1998

- **GROUNDWATER QUALITY** (International Conference).. Tübingen, Germany.. (Contact: Conference Secretariat GQ \*98, c/o Lehrstuhl für Angewandte Geologie, Sigwart-strasse 10, D-72076 Tübingen, Germany.. Tel: 497071 2974692; Fax: 49 7071 5059; E-mail: miloeJierbertQuni-tuebingen.deJ

26-27 September 1998

- **EVOLUTION OF STRUCTURES IN DEFORMING ROCKS**, Canmore, Alberta, Canada. (Contact: Shoufa Lin, c/o Geological Survey of Canada, 601 Booth St., Ottawa, Ontario K1A 0E8, Canada. Fax: 1613 995 7997; E-mail: slin#gs@nrcap.gc.ca; WWW: http://www.nrc.ca/nrc.gc.ca/ess/c/gd/c ig 9 8/)

27 September-2 October 1998

- **GAMBLING WITH GROUND WATER: PHYSICAL, CHEMICAL AND BIOLOGICAL ASPECTS OF AQUIFER-STREAM INTERRELATIONS** 25th Congress of the International Association of Hydrogeologists.. Las Vegas, Nevada, USA. (Contact: John Van Brahana, IAH Las Vegas, USGS., 1 IS Ozark Hall, University of Arkansas, Fayetteville AR 72701, U.S.A. Tel: +1 501 575 2570; Fax: +1 501 575 3846; E-mail: jbrahana@jungl.uarf.edu)

29-30 September 1998

- **IMPROVING THE EXPLORATION PROCESS BY LEARNING FROM THE PAST** Haugesund, Norway. (Contact: Norwegian Petroleum Society, P.O. Box 1897 Vika, N-0124 Oslo, Norway; Fax: 47 22 55 46 30; E-mail: karin.naugnes@npf.no)

30 September-3 October 1998

- **SOCIETY OF VERTEBRATE PALEONTOLOGY** (Annual Meeting), Salt Lake City, Utah, USA. (Contact: SVP, 401 N. Michigan Ave., Chicago, IL 60611-4267, USA., Tel: 1 312 321 3708)

## October

5-7 October 1998

- **FIFTH INTERNATIONAL CONFERENCE ON REMOTE SENSING FOR MARINE AND COASTAL ENVIRONMENTS**, San Diego Princess Convention Center, San Diego, California, USA. Organized by ERIM with sponsors that include NASA, NOAA/NESDIS, U.S. DOE Nevada Operations Office and Remote Sensing Lab., GER Corporation, RadarSat International, and National Wetlands Research Center. (Contact: ERIM Marine Conferences, Box 134001, Ann Arbor MI 48113-4001 USA. Tel: +1 313 994 1200, ext. 3234; Fax: +1 313 994 5123; E-mail: waillman@erim.org)

5-9 October 1998

- **INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY** (Annual Conference), Ischia Island, Naples, Italy., (Contact: Conference Secretariat, IAMG '91 c/o Antonella Duccianti, Dipartimento di Scienze della Terra, Università di Firenze, Via La. Pira 4, 50121 - Firenze., Italy.. Tel: +39 55 275 74%; Fax: +39 55 284.5711; E-mail: buccianti@cestj.unifi.it)

6-9 October 1998

- **GERMAN GEOLOGICAL SOCIETY (150th Annual Meeting)**, Berlin., Germany.. (Contact: Johannes Schroeder, Inst. für Angewandte Geowissenschaften II, Ernst-Reuter-Platz 1, D-10587 Berlin., Germany., Tel: 49 30 314 23650; Fax: 49 30 314 21107; E-mail: Geo-Iterini-98@tu-berlin.de)

7-8 October 1998

- **LOWER AND MIDDLE CRETACEOUS TERRESTRIAL ECOSYSTEMS: FILLING THE GAP** (International Symposium), Frutita Colorado, USA. (Contact: James Khidand, Dinamation International Society, 550 Jurassic Cr., Fraila, Colo. 81521 j)

7-9 October 1998

- **COMPUTER SIMULATION IN RISK ANALYSIS AND HAZARD MITIGATION** (International Conference)» Valencia, Spain. (Contact: Paula Doughty-Young, RISK ANALYSIS '98 Conference Secretariat Wexsex Institute of Technology., Ashurst Lodge, Ashurst, Southampton- SO40 7AA., UK. Fax: +44 1703 292 853; E-mail: paula.wessex.ac.uk)

19-21 October 1998

- **WILUSTON BASIN SYMPOSIUM** (8th International), Regina, Saskatchewan, Canada, (Contact: Dr. Doug Paterson, Saskatchewan Geological Society., P.O. Box 234, Regina, Saskatchewan, Canada S4P 2Z6. Tel: +1 306 787 2625; Fax: +1 306 7874608; E-mail: dpaterson@gov.uk.ca; WWW: http://www.gov.sk.ca/en/linie/abt>yt/scmneW.him)

26-29 October 1998

- **GEOLOGICAL SOCIETY OF AMERICA** (Annual Meeting)» Toronto., Canada. (Contact: GSA Meetings/ Dept., P.O. Box 9140, Boulder, CO 80309-9140, USA. Tel: +1 303 4472020; Fax: +1 303 447 1533; E-mail: meetings@geosoc.ty.org; WWW: http://www.gsa.org/mcmtngs/index.htm)

26-29 October 1998

- **SOCIETY OF ECONOMIC GEOLOGISTS** (Annual Meeting., with. GSA).. Toronto, Canada..

## November

8-11 November 1998

- **AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS** (International Conference and Exhibition), Rio de Janeiro., Brazil. (Contact: AAPG Conventions Department» P O Box 979, 1444 S Boulder Ave., Tulsa., OK. 74101-0979, USA. Tel: +1 918 560 2679; Fax: +1918 560 2684)

## December

1-3 December 1998

- **ORIGIN OF THE EARTH AND MOON** (International Conference of the Geochemical Society), Monterey, California, USA. (Contact: LeBecca Simmons., Lunar and Planetary Institute, 3600 Bay Area Boulevard, Houston TX 77058-1113, USA-Tel: 1 281 486.2158; Fax: 1 281 486 2160; E-mail: simmons@tpi.jsc.nasa.gov)

6-9 December 1998

- **THEME TO BE ANNOUNCED: I** Research Conference sponsored by Gulf Coast Section of Society of Economic Paleontologists and Mineralogists Foundation, Houston, Texas.. (Contact "OCSSEPM Foundation, 165 Pinehurst Rd., West Hartland, Conn. 06091-0065, USA. Tel: 800/436-1424; Fax: 860/738-3542; E-mail: gessep@nisail.snei.net; WWW: http://www.gcssepm.org)

6-10 December 1998

- **AMERICAN GEOPHYSICAL UNION** (Annual Fall Meeting), San Francisco, California, USA. (Contact: ACU Meetings Department, 199K Fall Meeting, 2000 Florida Avenue NW, Washington., DC 21009, USA. Tel: +1 202 6462690 (in Washington., D.C. area and outside North America., or +1 SOU 966 2481 (toll-free in North America); Fax: +1 202 328 0566; E-mail: meetinginfo@kosraos.agu.org; WWW: http://www.agu.org)

## 1999

### February

1-5 February 1999

- **SHALLOW TETHYS** (International Symposium), Oitang Mai, Thailand. (Contact: Shallow Tethys 5 Symposium Secretary, Dept of Geological Sciences., Chiang Mai University., Chiang Mat 502, Thailand; Fax: 66 53 892261)

### March

1-3 March 1999

- **THIRTEENTH INTERNATIONAL CONFERENCE AND WORKSHOPS ON APPLIED GEOLOGIC REMOTE SENSING: Practical Solutions for Real-World Problems**, Hotel Vancouver, Vancouver, British Columbia, Canada. Organized by ERIM with sponsors that include NASA, IZS, DOE Nevada Operations Office and Remote Sensing Lab. and USGS (Contact: ERIM Geologic Conferences, Box 134001, Ann Arbor, MI 48113-4001 USA., Tel: +1 313 994 12(K), ext. 3234; Fax: +1 313 994 51123; E-mail: waillman@erim.org)

1-4 March 1999

- **SOCIETY FOR MINING, METALLURGY, AND EXPLORATION** (Annual Meeting).. Denver Colorado, USA. (Contact: SME, 8307 Shaffer Parkway, P.O. BOX 625002, Littleton, CO 80162-5002, USA. Tel: 1 303 973 9550; E-mail: smenet@aol.com)

9-11 Mardi 1999

- **INTERNATIONAL CONFERENCE ON PANGAEA AND THE PALEOZOIC-MESOZOIC TRANSITION**, Wuhan, Hnfaei, China.. Contact: Dr. Tong Jinan., Faculty of Earth Science., China University of Geosciences, Wuhan. Hubei 430074» China. Tel: +86-27-7482031; Fax: +86-27-7801763; E-mail: jntong & dnsxug@fdu.cn)

## April

11-14 April 1999

- **AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS** (Annual Meeting).. San Antonio, Texas.. USA. (Contact: AAPG Conventions Department, PO Box 979, 1444 S. Boulder Ave., Tulsa, OK 74101-0979» USA..Tel: +1 918 5602679; Fax: +1 918 560 2684; E-mail: dkeim@aapg.org )

## May

26-28 May 1999

- **GEOLOGICAL ASSOCIATION OF CANADA - MINERALOGICAL ASSOCIATION OF CANADA, JOINT ANNUAL MEETING**, Stidbury, Ontario.. (Contact: Dr. P. Copper» Dept. of Earth Sciences, Laurentian University, Sudbury, Ontario P3E 2C6, Canada. Tel: (705) 675-1151 ext 2267; Fax: (705) 675-4898; E-mail: gacmac99@n ickel, taurent i nxa >

## June

June 1999

- **FOURTH INTERNATIONAL AIRBORNE REMOTE SENSING CONFERENCE AND EXHIBITION**, Ottawa., Ontario, Canada. Organized by ERIM. (Contact: ERIM Airborne Conferences. Box. 134(301. Ann Arbor, MI 48113-4001 USA. Tel: +1 313 994 1.200, exL 32.34; Fajc+J .313 994 3123; E-mail: walJman#eiri.m...org)

7-11 June 1999

- **EUROPEAN ASSOCIATION OF GEOSCIENTISTS AND ENGINEERS (EAGE**. 61st Conference)), Helsinki., Finland.

## July

19-30 July 1999

- **INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS**, Birmingham, UK. (Contact: IUGO99, School of Earth Sciences, University of Birmingham., Edgbaston, Birmingham B15 2TT, UK, Fax: 44 121 414 4942; E-mail: IUGG99@bham-ac.uk)

## August

3-12. August 1999

- **INTERNATIONAL UNION FOR QUATERNARY RESEARCH (INQUA)** (15th Congress).. "The Environmental Background to Hominid Evolution in Africa" Durban, South Africa. (Contact: Dr D. Margaret A very. INQUA XV CONGRESS, P.O. Box. 61., South Africa Museum, Capetown 8000. South Africa; Tel: +27 21 243 330; Fax: +27 21 246 716; E-mail: mavery@samu scorm .ac.za ; WWW : http://inqua.geoscience.org.za)

14-25 August 1999

- **CARBONIFEROUS-PERMIAN** (XIV International Congress)» Calgary» Alberta, Canada. (Contact: Dr. Charles Henderson, Associate Professor., Department of Geology and Geophysics, The University of Calgary, N W Calgary, Alberta, Canada T2N 1N4. Tel: 403 220 6170; Fax: 403 285 0074; E-mail: bemderson@geo.ocalgary.ca)

22-25 August 1999

- **SOCIETY FOR GEOLOGY APPLIED TO MINERAL DEPOSITS (SGA)** (5di Biennial Meeting), "Mineral Deposits: Processes to Processing" London, UK, Imperial College Natural History Museum. (Contact: Dr. Chris Stanley. Department of Mineralogy, Natural History Museum, Cromwell Road, London, SW7 5BD, UK., Tel: +44 171 938 9361 ; Fax: +44.171: 9389268; E-mail: cjs@nhrajac.ufc)

## September

September 1999

- **THE CONTINENTAL PERMIAN -OF THE SOUTHERN ALPS AND SARDINIA (ITALY); Regional reports tmegenemi correlations** (International Field Conference), Brescia, Italy (Contact: Prof. G. Cassinis, Dipartimento di Scienze della Terra., Uatversila\* di Pavia, Via Feirata., 1,1-27100 Pavia, Italy. Tel: 39 382 505834; Fax: 39 382 505890; E-mail: cassinis@ipv36.tinipv.it)

September 1999

- **INTERNATIONAL ASSOCIATION OF HYDROGEOLOGISTS**; (29th Congress).. Bratislava, Slovakia. (Contact: Prof. L. Mèlions, Comenius University, Mylinska Dolina. 842S 5 Bratislava, Slovakia. Tel/Fax: +42 7 725 446; E-mail: podzvody@fns.uni.ba.sk)

September 1999

- **INTERNATIONAL SOCIETY OF ROCK MECHANICS** <9th International Congress>., Paris, France. (Contact: Dr. S. Gentier, Secrétaire Général du CFMR. BRGM/DR/GGP, Avenue Claude Gullemin, B.P. 6009, F-45060 Orléans Cedex 2., France., Tel: +33 2 38-64 38 77; Fax: +33 2 38 64 3062)

12-15 September 1999

- **AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS** (International Meeting), Birmingham, UK. (Contact: AAPG Conventions Dept.. P.O. Box. 979» Tulsa, OK 74101-0979, USA. Tel: 1918 560 2679; Fax: 1 918 560 2684)

## October

25-28 October 1999

- **GEOLOGICAL SOCIETY OF AMERICA** (Annual Meeting), Denver, Colorado., USA., (Contact: GSA Meetings. Dept., P.O. Box 9140, Boulder., CO 80301-9140; USA. Tel: +1 303 447 2020; Fax: +1 303 447 1133; E-mail: meetings@geosociety.org; WWW: http://www.geosociety.org/Rietnigs/Uideji.htm)

30 October-4 November 1999

- **SOIL SCIENCE SOCIETY OF AMERICA** (Annual Meeting), Salt Lake City, Utah., USA.. (Contact: SSSA, 677 So. Segoe Rd, Madison, WI 53711., USA..Tel: 1 608 273 8090; Fax: 1 608 273 202 i ; E-mail: rbarnes@agronomyjarg)

## December

5-8 December 1999

- **THEME TO BE ANNOUNCED**: (Research Conference sponsored by Gulf Coast Section of Society of Economic Paleontologists and Mineralogists Foundation). Houston., Texas. (Contact: GCSSEPM Foundation. 165 Pinehurst Rd., West Hartland, Conn. 06091 - 0065., USA. Tel: 800/436-1424; Fax: 860/738-3542; E-mail: gessep# mail .snet.net.; WWW: http://www.w.gcssep.nt.org)

## 2000

### March

6-9 March 2000

- **SOCIETY FOR MINING, METALLURGY, AND EXPLORATION** (Annual Meeting).. Salt Lake City, Utah., USA. (Contact: SME. S307 Shaffer Parkway, P.O. Box 625002» Littleton, CO 80162-5002, USA; Tel: 1 303 973 9550; E-mail: smenet@aol.com)

### April

16-19 April 2000

- **AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS** (Annual Meeting), New Orleans, Louisiana., USA. (Contact: AAPG Conventions Department, P G' Box 979., 1444 S. Boulder Ave., Tulsa, OK 74101-0979, USA. Tel: +1 9185602679; Fax: +1 918 5602684; E-mail: olcehn@aapg.org)

### May

7-SI May 2000

- **SALT SYMPOSIUM**, The Hague. The Netherlands. (Contact: Secretarial Organizing Committee» 8th World Salt Symposium, PO Box 25., 7550 GC Hengelo Ov, The Netherlands. Tel: 31 74 244.390»; Fax: 31 74 2443272; E-mail: Sall2000@an.ter.NL.net)

21-24 May 2000

- **WHAT IT MEANS TO BEAN EDITOR** (7th General Assembly and conference of European Association of Science Editors), Tours, France. (Contact: Jenny Gretton, EASE, PO Box 426, Guildford. GU4 7ZH, UK. Tel/Fax: 44 (0) 1483 2110,56; E-mail: <# jsec ret ary >@ease. org. u.k.)

### June

4-9 June 2000

- **INTERNATIONAL SYMPOSIUM ON THE BIOGEOGRAPHY OF SEASIA 2000** Leiden, The Netherlands. (Contact: Rien de Jong, Nationaal Natuurhistorisch Museum, Department of Entomology, PO' Box 9.517, NL-2300RA Leiden., The Netherlands.. Tel: +31 71 516 26 52; Fax: +3 1 71513 33 44; E-mail: L.:jo ng@nmm.nl)

