

Pangea and Problems

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Supercontinent cycles involve the repeated amalgamation and subsequent break-up of continental lithosphere and are a fundamental aspect of the Earth's evolution. Despite its importance, however, the overall geodynamic regime responsible for supercontinent cycles remains poorly understood. The most recent supercontinent, Pangea, existed from the mid-Carboniferous (ca. 320 Ma) until the Upper Triassic (ca. 200 Ma) and its assembly and dispersal profoundly influenced Earth's recent evolution.

Processes responsible for the initiation of Pangea rifting, prior to the onset of Early Jurassic break-up, remain a subject of debate. Several models have been postulated. However, all models fail to explain (at least) the three large-scale tectonic phenomena that followed the assembly of Pangea and set the tectonic framework for its subsequent break-up and dispersal: (i) the opening of the Neotethys ocean and the genesis of the Cimmerian ribbon continent, (ii) the short-lived Early Permian large thermal anomaly that affected most of the interior of Pangea, and which included opening of radial rift basins containing abundant alkalic magmatic rocks, and (iii) the development of a continental-scale orocline at the centre of Pangea (the Cantabrian or Iberian-Armorican Arc).

For this session, we invite contributions that consider Pangea evolution and its problems, using evidence from any geological discipline and address existing problems outlined above.