Late Eocene Global Plate Reorganization and Development of Extensional Basins in East China

Starting in Late Eocene, a global reorganization of plate was triggered by the termination of oceanic subduction beneath the India-Eurasia collision zone. This plate reorganization is evident by collision of India-Eurasian plates and the changes in orientation of the Pacific Emperor-Seamount chain, as described by Patriat et al. (1984). East China lies between the subduction zones of the western Pacific and Tethys-Himalayan tectonic belt, thus the effect of this plate reorganization event on the eastern Chinese continent was profound, which initiated a most extensive rifting episode in this region during Tertiary, in which contain plentiful oil and gas resources. In North China, the transtension along the northern segment of the Tancheng-Lujiang Fault was changed into extension in NW-SE direction. The NNE trending basins of the second basin episode of the Bohaiwan basin, with the deposition of fluvio-lacustrine sequences, formed during Cenozoic. In the South China, the extrusion and clockwise rotation of Indochina Block related to the collision of India-Eurasia caused the formation of a series of NE trending basins, which were overlain by more extensive postrift marine deposits, on the northern margin of South China Sea. East China Sea basin is close to subduction belt of Pacific plate, and strong convergence stress from this plate subduction made East China Sea basin ended synrifting evolution earlier than other basins. A new model for the Tertiary tectonic and stratigraphic evolution of rifting basins in East China is presented.