



Regional Geodynamic Implications of the Structural Evolution of the Phu Khanh Basin, Offshore Central Vietnam, South China Sea, Based on Interpretation of Multichannel Reflection Seismic Profiles.

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The Phu Khanh Basin is one of the least explored basins in the South China Sea-region. Based on the interpretation of an open grid consisting of multichannel reflections seismic profiles 3 distinct rift-phases followed by a phase of tectonic quiescence and thermal subsidence are evidenced. The initial rift-phase commenced during the Paleogene and lasted until mid-Oligocene times and was probably forced by the slap-pull from the subduction of the proto-South China Sea underneath Borneo. The rift-phase ended due to onset of left-lateral movements in the coast-parallel East Vietnam Boundary Fault Zone (EVBZF) forced by the Indian-Eurasian collision and the related SE-wards extrusion of Indochina. The left-lateral movement resulted in the inversion of older structures and subsequently caused NW to NNW striking extensional structures to form. This second rift-phase ended at the turn of Paleogene due to a second phase of inversion, this time induced by moderate right-lateral strike-slip in the EVBZF. Right-lateral movements caused the formation of approximately N – S trending rift-structures of various kinds. The right-lateral wrenching in the Phu Khanh Basin is interpreted as part of a contemporary, more regional event observed across greater parts of the south Indochinese region. The event was probably forced by the onset of counter-clockwise rotation of the Malaysian and Indonesian region south of

the South China Sea. This third rift-phase culminated during earliest Miocene times and heralded the latest tectonic phase of the basin characterized by thermal subsidence and eastwards down-warping due to the late Neogene uplift of Central and South Vietnam farther west induced by regional Volcanism.