



Geodynamic settings of microcontinents, non-volcanic islands and submerged continental marginal plateau formation

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Complex process of continental lithosphere breakup is often accompanied by full or semi isolation of small continental blocks from the parent continent such as microcontinents or submerged marginal plateaus. We present different types of continental blocks formed in various geodynamic settings. The process depends on thermo-mechanical properties of rifting.

- 1) The continental blocks fully isolated from the parent continent. This kind of blocks exist in submerged form (Elan Bank, the Jan-Mayen Ridge, Zenith Plateau, Gulden Draak Knoll, Batavia Knoll) and in non-submerged form in case of large block size. Most of listed submerged blocks are formed in proximity of hot-spot or plume.
- 2) The continental blocks semi-isolated from the parent continent. Exmouth Plateau, Vøring, Agulhas, Naturaliste are submerged continental plateaus of the indicated category; Sri Lanka, Tasmania, Socotra are islands adjacent to continent here. Nowadays illustration of this setting is the Sinai block located between the two continental rifts.
- 3) The submerged linear continental blocks formed by the continental rifting along margin (the Lomonosov Ridge). Suggested evolution of this paragraph is the rift propagation along existing transtensional (or another type) transform fault. Future example of this type might be the California Peninsula block, detached from the North American plate by the rifting within San-Andreas fault.
- 4) The submerged continental blocks formed by extensional processes as the result of asthenosphere flow and shear deformations. Examples are submerged blocks in the central and southern Scotia Sea (Terror Bank, Protector Basin, Discovery Bank, Bruce Bank etc.).
- 5) The continental blocks formed in the transform fault systems originated in setting of contradict rifts propagation in presence of structure barriers, rifts are shifted by several hundreds kilometers from each other. Examples of this geodynamic setting are Equatorial Atlantic at the initial development stage, and the transitional zone between Mohns and Gakkel Ridges.

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