

Mode of mantle convection and global sea level (2) - Temporal change of tectonics -

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We propose the temporal change in tectonics on the earth as below: (1) 0-0.8Ga, oceanic plates have negative buoyancy at the trench, (2) 0.8-1.3Ga, subducting slabs have negative buoyancy, (3) 1.3-2Ga, subducting slabs have positive buoyancy but can be driven into the asthenosphere by convection, (4) 2-4Ga, subducting slabs have large buoyancy and plates are stagnant at the surface. This change causes late Archean-early Proterozoic and Phanerozoic emergence of continents above sea level, which have implications for the evolution of life, banded-iron formation and ice ages.