

# Construction of Globe Dynamics, based on Plate Tectonics

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Plate Tectonics describes that globe surface behaves as to be covered by limited number of rigid plates. The plate motions can be express with Euler poles and rotation speeds. Detailed surveys and analyses on the lineation of magnetic anomalies along the mid-oceanic ridges realized to describe the ocean spreading histories as the changes in the Euler rotation vectors. The position of the magnetic lineation is the integration of the spreading rate. The differential of the spreading rate is corresponding to the acceleration of spreading, and directly relates the driving force. The source position of the driving force can be estimated along the Euler equator of the differential rotation vector, where appears highest speed of the Euler rotation.

Hawaiian hotspot trace, assuming to fix on Eurasia Plate and reconstructed with reported ocean spreading histories, is agreed with the detailed changes in the Hawaiian chain until 33 Ma but not before. Significant changes were recorded on the spreading history on the northern part of mid-Atlantic Ridge from 46 Ma to 33 Ma, the changes is consistent with the discrepancy of the Hawaii hotspot trace before 33 Ma. The Euler equator of the differential rotation vector passed through India and China.

The spreading history in the Indian Ocean had also significant changes in the time interval, and the Euler equator passed through Indian collision zone. We can conclude that the changes in the global plate motions were droved by the Indian collision to Eurasia Plate.

The differential rotation vector is useful tool to analyze the driving force of plate motion. The rigid nature of plates on the globe allows us to apply Dynamics on rigid body for the plate motion as Globe Dynamics.