Cyclical Variation in the Length of the Earth's Radius as the Primary Mechanism for Deep Ocean Basin Development of Global Cycles of Kilometer-Scale Ocean Level Fluctuation and Ocean Low-Stand Surfaces of Erosion, Transportation and Deposition

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Meander-pattern channel morphologies observed on the ocean floor using GLORIA side scan sonar images near De Soto Canyon (Florida) and Monterey Bay (California) are inactive channels, since they are draped by pelagic ooze. More than three kilometers (9,842+ feet) of ocean water presently covers both locations.

If the presence of meander-pattern channel morphology is a unique indicator of known subaerial fluvial processes, then at least three kilometers of ocean level fluctuation is required to develop and then submerge these low-stand surfaces of erosion, transportation and deposition at the above locations.

If the above required ocean volume is assumed to have been stored in enlarged fractures in the ocean bottom, then calculations can be made to determine the necessary radius length increase to generate the equivalent fracture volume.

The simplifying assumptions used in the global cycle calculations are as follows: 1.)Perfect global shell spheroidicity, 2.)Constant volumes for Ocean, Crust and Mantle Shells, 3.)Symmetrical radius variation during regression and transgression, 4.)Global response to pressure, temperature and volume can be approximated by the radius formula $R=1-e^{(-t/T)}$ where t=elapsed time and T=time period.

Observations that are in harmony or conflict with the concept of a variable Earth's radius are presented from many geoscience fields of study.