Abstract Details

<u>AOGS 1st Annual Meeting</u> > <u>Interdisciplinary Working Groups</u> > A New Kinematic Reference Current Plate Motions >

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 - **Title:** A New Kinematic Reference Frame of Current Plate Motions

Abstract:

Presently, there are two reference frames of absolute plate motions Net-Rotation(NNR) reference frame and Hotspot(HS) reference frame they have several disadvantages in application. For example, NNR ref frame may have net rotation relative to the lower mantle; there are r motions among the hotspots. This paper presented a new kinematic reference frame, called Pacific Ridge-Fixed(PRF) reference frame, to c absolute plate motion, which is based upon the following assumption ridge(especially the boundary between pacific and Nazca plates) is no moveable relative to the lower mantle. There are five geophysical evi to support this assumption. According to this assumption, we establis new absolute plate motion model, called PRF-NUVEL1, based on the r plate motion model NUVEL-1. The Euler pole(Φ =55.6 \diamond S, Λ =89.9 \diamond E) pacific plate in PRF-NUVEL1 is very close to the pole(Φ =60.2 ϕ S, Λ =9 in HS2-NUVEL1, but its rotation rate(ω =0.710@/m.y.) in PRF-NUVEL1 smaller than that(ω =0.980 ϕ /m.y.) in HS2-NUVEL1 and larger than that(ω =0.670 /m.y.) in NNR-NUVEL1. According to our analysis, the NUVEL1 may be more suitable absolute plate motion model.

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