Toward Determining a Global Plate Motion and Strain Rate Model

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Toward constructing a new model of current plate motion and plate boundary strain, we created a global map of 56 plate plates, narrow or diffuse zones marking their boundaries, the rotation poles describing motion of the plates, and GPS sites analyzed by the Nevada Geodetic Laboratory.

There are six types of plate boundaries, three being narrow (spreading centers, subduction zones, and transform faults) and three being zones of distributed deformation (extensional, collisional, and oblique).

We expect new GPS sites and data to better constrain:
(1) intraplate deformation generated by solid Earth's viscous response to unloading of the late Pleistocene ice sheets,
(2) the angular velocity of both major plates and microplates, and
(3) the strain rate tensor locations inside plate boundary zones.