

Geodetic inversion analysis with multi time scale and its application

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The recent expansion of permanent Global Positioning System (GPS) networks provides crustal deformation data that are dense in both space and time. These networks record many kinds of phenomenon that have different time scale. We develop a new geodetic inversion method that can detect spatio-temporal slip distribution from such dense frequently sampled geodetic data. This method can detect fault slip for a short period and a long period at a time. A numerical experiment suggests that this method works well in Tokai region. We invert GPS velocities to infer the interplate motion during March 1996 to December 2005 in that region. From this analysis we obtain the model of temporal interplate motion.