

عنوان مقاله:

AN INVESTIGATION ON HORIZONTAL CRUSTAL DEFORMATION BY APPLYING LEAST-SQUARE PREDICTION METHOD ON GPS DERIVED VELOCITY

محل انتشار:

پنجمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1386)

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خلاصه مقاله:

In order to estimate crustal deformation of Kyushu Island-Southwest Japan, we applied least square prediction method on GPS data. Because of dense array of continuous GPS stations in Japan and also not difficult access to their data we choose Kyushu Island, Southwest Japan, to estimate its horizontal strain. For the period of 5 years from 1998 to 2002 we used unbiased corrected GPS observation data and derived two empirical covariance functions, for the EW and NS components, to estimate the velocity vectors at any arbitrary locations. After all, by getting spatial differentiation, we estimate the dilatation, maximum shear strain and principal strains, including bi-directional maximum and minimum compression axis. The dilatation map shows a compression state zone that spread along Shikoku Island toward the central-east of Kyushu Island. The maximum rate of negative dilatation, compression state, in the southwest of Shikoku Island with the direction of NNW, is 0.19 – 0.21 .strain / yr that delineate the subduction effect of Philippine Sea plate under the Amurian plate. On the other hand, in the southwest of Kyushu Island the positive dilatation, extensional state, with the rate of 0.05 – 0.07 .strain / yr and with the direction of NW-SE is dominant and can explain the opening feature of the northern tip of the Okinawa trough in the western off this area

کلمات کلیدی:

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