Crustal strain rate jump in the Kinki district of the southwest Japan revealed from GPS daily data

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The strain rate changes of baselines are revealed for the purpose to detect the irregular status of crustal strain in the GPS network operated by GSI (GEONET). The series of daily strain data calculated from the pairs of station coordinates in Kinki district, southwest Japan, are preprocessed with smoothing, correction of the steps and the removal of seasonal variation. The linear data after the processing are adapted to one of the 3 models with 2,4 or 6 degree of freedom. Temporal and spatial distribution of the folding points of the data graph represents the characteristics of strain change. At the Niigata Kobe Tectonic Line, the strain rate change of the principal axes of extension in NW-SE direction and contraction in NE-SW direction was appeared on the autumn of 2002. These phenomena consist to the result of continuous strain observation in the horizontal vaults.