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Estimation of strain accumulation of densification network in Northern Marmara Region, Turkey

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Abstract. Strain analysis is one of the methods for the kinematic a of the repeated geodetic measurements. In order to derive strain accumulation in Marmara Region, different institutions carried out s Global Positioning System (GPS) campaigns in 1999 and 2006. The campaigns were performed on the geodetic network which cover t provinces: Kirklareli, Tekirdag, Bursa, Bilecik and Adapazari. Then, t displacements of the network stations were estimated by means c analysing the GPS space geodetic measurements. For the assessr the datum differences between 1999 and 2006 on the station cool 3-D Helmert transformation was applied to the coordinates of each and 2006 datum. Then, a global test was introduced to determine significant deformation which occurred in the geodetic GPS network accumulation with a finite element model was then computed. First triangles were constructed for the whole network with the Delaun: method. Hereafter, strain parameters were calculated for each tria Maximum values of strain accumulation were found around the surroundings of Marmara Ereglisi and Izmit, whereas minimum val around Istanbul.

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