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Analysis of GPS baseline length changes and their implications for strain rate calculation.

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This poster presents analysis of changes in GPS baseline length from the EPN network. For the study the observation from over 280 stations from years 1996-2010 were used. Data was processed in GAMIT software (version 10.4). The GPS network was tessellated into individual triangles based on Delaunay triangulation. Nearly 600 baselines were received. The baselines length were obtained directly from observations, for this study any network adjustments were not included. This approach was chosen to minimize the influence of the reference frame realization. Time analysis were carried out in TsView Toolbox and were aimed to determine the rate of changes in baseline length. For this purpose different ways were used (simply regression with different rejection criteria, annual and semi-annual signals also were taken into account). The linear strain rates were calculated on the various values of rates obtained from analyzed time series. Analysis showed that the method of rate determination have significant impact on the values of linear strains, which turn affect to the strain rates tensors calculated in triangles.