Stress and strain field in the Tatra Mountains

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The goal of this poster is to present geodynamic research of the Tatra mountains crust movements. To that goal epoch's GNSS measurements have been performed annually since 1998 with at least 96 hours' duration. The data processing has been made in Bernese software version 5.0 according to CEGRN and EUREF recommendation. The estimate of point's velocity has been done together with the study of stress and strain fields. The finite element method with its linear and quadratic elements has been applied. For that purpose, 3D computational domain has been created. The upper boundary has been the real Earth's surface represented by SRTM and discretized by series of triangles where displacements as boundary condition (BC) were prescribed. The lower boundary has been placed to the Moho surface, in depth 35 km. Additional side boundaries were created here the zero Neumann BC was supposed. The different material properties in different parts of the domain have been taken into account. Finally, there were determined three risk zones with higher posibility of occurring the earthquakes where the detailed study was done.