

This year's update on the Burträsk fault seismicity

Darina Buhcheva, Björn Lund

Department of Earth Sciences, Uppsala University, Sweden

The melting of the ice sheet over Fennoscandia after the last ice age some 10,000 years ago triggered a number of earthquakes with magnitudes over 7. Today, the Burträsk fault, one of these reactivated faults, is located in the most seismically active region in Sweden, with an average earthquake occurrence of around 2 events/day with $M > -1$. In August 2015 we deployed six new stations close to the Burträsk fault to improve the data quality and azimuthal coverage of the temporary seismic network. Now, our Burträsk network consists of 12 temporary stations together with 10 complementary stations of the Swedish National Seismic Network (SNSN). We observe more than a 30% increase in the average number of catalogued earthquakes for the last six-month period of analysed seismicity after the new stations have been added. Here we present an analysis of the data gathered from December 2012 to February 2016. In this time frame we have recorded and manually inspected over 2700 earthquakes. We use our best located events to invert for a new 1D minimum velocity model for both P- and S-waves using VELEST. A depth region of a lower v_{ps} ratio down to 20 km depth is revealed. We perform relocation of the whole dataset using the new velocity model and the double-difference relocation technique. We look into details of the depth distribution of the events and how the relocation procedure affects the final hypocentral locations. We calculate focal mechanisms and analyze faulting style variations in the region. The current seismicity is then used to aid the analysis of the endglacial M7+ Burträsk earthquake.