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Title: The M 7.7 Tocopilla earthquake and its aftershock sequence: deployment of a Task Force local network

Abstract

After the November 14, 2007 Tocopilla earthquake in northern Chile, a local network of 20 short period seismic stations, 5 strong motion instruments, 6 GPS stations and 3 extensometers has been installed in the fault plane area between Tocopilla and Antofagasta by the German Task Force for earthquakes (GFZ Potsdam). The hydrogeology group of the TF sampled 20 thermal water sources in the area of the El Tatio geyser field, located about 170 km E of the epicentre. In collaboration with the IPG Paris, 4 broad band stations were deployed at the northern end of the fault plane between Tocopilla and Maria Elena. Major targets of the investigations of the aftershock sequence are the segment boundary between the 1995 Antofagasta earthquake and the recent Tocopilla event, stress transfer between both successively ruptured subduction zone segments, structural properties of the fault plane, possible consequences for the northern adjacent Iquique segment, and the influence of earthquake seismic waves on the El Tatio hydrothermal field. In our presentation we would like to show first results on the spatial distribution of the aftershocks and discuss these in relation to studies we have made on the Antofagasta aftershock sequence.