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Seismicity of the SE Aegean observed by the temporary EGELADOS network

Andrea Bruestle (1), Ludger Kueperkoch (1), Thomas Meier (2), Wolfgang Friederich (1), and the EGELADOS working group Team

(1) Institute of Geology, Mineralogy and Geophysics, Ruhr-University Bochum, Germany (bruestle@geophysik.ruhr-uni-bochum.de), (2) Institute of Geosciences, Christian-Albrechts-University Kiel, Germany

The Hellenic Subduction Zone (HSZ) is the seismically most active zone in Europe. Here, the African plate is subucting beneath the Aegean plate with a relative velocity of about 4 cm per year.
The temporary broadband EGELADOS network (part of the SFB 526 'Rheology of the earth') covered the whole southern HSZ from October 2005 to April 2007. The network consisted of 45 land and 23 ocean bottom stations of the German amphibian seismograph pool (DEPAS) and 11 land stations of the Ruhr-University Bochum. Additionally, 17 permanent land stations of the GEOFON network (GeoForschungsZentrum Potsdam, Germany) and of the NOA network (National Observatory Athens, Greece) were added to this regional network. Seismic events are detected and identified by an STA/LTA-trigger and a grid-search algorithm, where relative travel times of pre-defined master events are compared to observed differential trigger times. Because of the high seismicity, the manual processing of the data is focused on the SE part of the HSZ. More than 5500 events were manually located with a local magnitude range from 0.1 to 4.8.
The region is dominated by shallow seismicity in the upper part of the overriding Aegean lithosphere (e.g. Amorgos graben and W of Nisyros island within the volcanic arc) and the transition zone of the Aegean-Anatolian plates (e.g. gulf of Gökova). The deformation within the overriding plate seems to change strongly along the forearc. While in the forearc south of Crete high seismic activity can be observed along the boundaries of forearc slivers marked by the Ptolemy and Pliny trenches, nearly no seismicity in the region of Rhodes indicates low internal deformation of the Aegean plate. The located intermediate depth microseismicity allows to define the Benioff zone of the subducting African lithosphere down to about 160 km. Remarkable is the strong clustering of mircoseismicity in the Benioffzone below the Nisyros volcanic centre.
The high seismicity and the dense network require an automatic processing of the entire dataset to achieve a complete image of the whole southern HSZ.