



ALPASS – Passive seismic monitoring in the Eastern Alps

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The project ALPASS is a passive seismic monitoring project aiming to reveal the structure of the lower lithosphere and upper asthenosphere in the region of the Eastern Alps and their transition to the surrounding tectonic provinces (Bohemian Massif, Carpathians, Pannonian Basin, Dinarides). ALPASS is an international cooperation between Austria, Croatia, Finland, Hungary, Poland, and the USA. The deployment of 80 temporary seismic recording stations along 3 profiles started in May 2005 and will

last until April 2006. The layout of the ALPASS profiles was designed to supplement and extend the efforts of earlier experiments (e.g. TRANSALP) and to support two other passive seismic experiments (BOHEMA, Carpathian Basin Project) which are overlapping in the investigation area. In addition to data from the temporary network teleseismic data from about 110 permanent stations (located between 45° - 50° N and 13° - 18° E) are collected regularly. During the period May 2005 to December 2005 seismic recordings of about 200 events with magnitudes > 4.5 and epicentral distances between 30° and 100° were collected.

ALPASS will build on results of the former 3D WAR/R-experiments CELEBRATION 2000 and ALP 2002 which provide a detailed conception of crustal structure and Moho depth. New information on lithospheric and upper mantle structures will be achieved by receiver function analyses, teleseismic P-wave tomography, and surface wave tomography. Relocation and moment tensor inversions of local earthquakes are additional project goals to obtain precise hypocenter locations in order to delineate active faults. The main scientific goals of ALPASS are the resolution of lower lithosphere and upper mantle structures related to subduction, collision and escape tectonics. Lithospheric structures should also be related to present day geodynamics and seismicity.