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Preliminary results on seismic anisotropy in the Central Apennines and the Dinarides from the "Central Adriatic Seismic Experiment" (CASE) project

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In the framework of the AlpArray project (AlpArray Seismic Network, 2015), the complementary "Central Adriatic Seismic Experiment" (CASE; AlpArray Seismic Network, 2016) was established as collaboration between ETH Zürich, University of Zagreb, INGV and Republic Hydrometeorological Service of Republic of Srpska. The CASE project consists of 10 temporary stations, installed in October 2016 (and still working), and located in Bosnia and Herzegovina, Croatia and Italy. Temporary broadband seismic stations, with the permanent stations present in the region shared by the Croatian Seismological Service and INGV, make an almost continuous transect cutting the Central-Southern Apennines, the central Adriatic region, central External Dinarides and finishing at the eastern margin of the Internal Dinarides. The presence of the Apenninic and the Dinarides slabs, verging in opposite directions and plunging along the opposite sides of the Adriatic plate, make this area a peculiar spot to understand the complex dynamic of the region. Various tomographic images (e.g. Bijwaard and Spakman, 2000; Piromallo and Morelli, 2003) do not indicate continuous slabs under the Apennines and the Dinarides, suggesting the presence of slab-gaps right beneath the region covered by the CASE experiment.
Here we present the preliminary results of the SKS splitting analysis performed on the data recorded (up to now) by the temporary and permanent seismic stations included in the CASE project. These preliminary results, in combination with previous interpretations, will provide clues about how Northern and Southern Apennines are connected at depth, how the slab rollback of the Apennines thrust belt acted, and if and how the Apennines are in relation with the Dinaric region. Together with the measurements from previous studies and from the AlpArray project, our new data will support the mapping of the seismic anisotropy deformation pattern from the Western Alps to the Pannonian region.

References:

- AlpArray Seismic Network (2015), "AlpArray Seismic Network (AASN) temporary component", AlpArray Working Group. Other/Seismic Network. doi:10.12686/alparray/z3_2015, http://www.alparray.ethz.ch/home/ Datacite Link: http://data.datacite.org/10.12686/alparray/z3_2015
- AlpArray Seismic Network; (2016): "Central Adriatic Seismic Experiment (CASE)" - AlpArray; AlpArray Working Group. Other/Seismic Network. https://doi.org/10.12686/alparray/8x_2016, Datacite Link: http://data.datacite.org/10.12686/alparray/8x_2016
- Bijwaard, H., Spakman, W., (2000). "Non-linear global P-wave tomography by iterated linearized inversion". Geophys. J. Int. 141, 71–82. http://dx.doi.org/10.1046/j. 1365-246X.2000.00053.x.
- Piromallo, C., Morelli, A., (2003). "P wave tomography of the mantle under the Alpine- Mediterranean area". J. Geophys. Res. Solid Earth 108, http://dx.doi.org/10.1029/ 2002JB001757

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