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Observations of SKS splitting beneath the Northern External Dinarides

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The area of study is located in the broad Africa-Eurasia convergent plate boundary zone and it covers Northern Croatian Littoral, including its hinterland, where tectonics are characterized by complex interaction between the Adriatic microplate and the Dinarides. Number of global and regional tomographic studies indicate apparent slab-gap in the northern and possibly central parts of the Dinarides (especially at the upper mantle depth), probably due to a recent slab break-off. However, tomographic results are far from unique and the mantle structural models in this region are less certain than they are in the surrounding areas. In order to provide more data needed to help resolve the ambiguities, we estimate seismic anisotropy from observations of SKS splitting. Here we present the results of SKS splitting analysis performed on the available data recorded on broadband seismological stations in the studied area (permanent stations operated by Croatian Seismological Survey and temporary stations recently installed within the VELEBIT multidisciplinary research project financed by the Croatian Science Foundation (IP-09-2014)). Since it is the first SKS splitting study of anisotropic properties for this studied area, these new results should provide constrains for modelling geodynamical processes occurring in the region. Moreover, this results together with the SKS splitting results in the surrounding areas (in the Central and Southern External Dinarides, the Alps and the Apennines) will support the mapping of the seismic deformation pattern and enhance understanding of Earth's crust and upper mantle structure.