



Tracking SKS shear-wave splitting across Central and Eastern Europe by using permanent networks and one single event

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During the last decades a lot of SKS studies have been performed to detect and analyse seismic anisotropy in the upper mantle. Most of these investigations are based on temporary experiments. Usually these experiments cover regions of several hundred of kilometers with the scope to investigate one or two tectonic provinces or their transition zone respectively. Due to temporary limitations - usually 6 to 18 months - the experiments offer the possibility to record some events with reasonable SKS signal-to-noise ratio and under favourable circumstances one or two events with SKS showing high transversal SKS energy clearly above noise level.

Here we propose another approach. Since the number of permanent stations has increased rapidly over Europe during the last years, we combine SKS records from several countries and institutions to investigate a broader region than those covered by temporary experiments. The second advantage of this philosophy comes from the long registration periods of the permanent stations, which allows to select SKS events with particular energetic SKS amplitudes.

For a start we concentrate on records of one single event, namely the $MW = 6.8$ event of 13 November 2006 from the Santiago del Estero province (Argentina), a source region for which energetic SKS amplitudes have often been observed on European stations. For this event we collected data from permanent stations in Central and Eastern Europe (e.g. GEOFON (data from Poland, Czechia, Hungary, Russia etc.), GRNS (Germany), SED (Switzerland)) and we prepared seismogram sections in a narrow azimuth range. The sections cover the epicentral distance range between 93° to 115° , e.g. from station GIMEL (Switzerland) in the southwest to station PUL (Russia) in the northwest of Europe. The SKS phase can be clearly correlated on the sections, most of

the records show considerable SKS splitting. Since up to now, we have analysed only one single event, the resulting splitting parameters have still to be regarded as apparent splitting values. Nevertheless, the lateral variations of the splitting parameters over Central and Eastern Europe can be interpreted with respect to the major tectonic units (Alps, Varsican Orogen, East European Platform), plate motions and stress directions.