



Investigations of upper mantle anisotropy beneath the Gräfenberg-Array - first usage of the new three-component broadband stations in the SKS splitting analysis

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In autumn 2006 the conversion of the 13 stations of the Gräfenberg-Array to three-component STS2-seismometer has been completed. Since this time the data of the new system is available to the public for scientific research.

In a first study we use the new 3-component Gräfenberg-Array to investigate the anisotropy of the upper mantle beneath the Franconian Jura. As already had been investigated in several earlier studies we analyse the shearwave splitting of SKS phases to determine the anisotropy parameters, namely the delay time and the direction of the fast axis of the anisotropic mantle material. In addition to earlier studies the new instrumentation of the Gräfenberg-Array opens up two new investigation aspects: (1) the new dense coverage with three components offers the possibility to resolve possibly existing smallscale variations of the anisotropy. These variations might be caused by the tectonic transition from Saxothuringicum to Moldanubicum crossing the lithosphere beneath the array. (2) If variations might be negligible we will apply array methods to get a better signal-to-noise ratio of the SKS phase on the beam trace. This procedure could enable us to analyse weak events from azimuth ranges not covered yet. In the time span of October 2006 to December 2007 several energetic SKS-events took place. First results of our analysis will be presented on the poster.