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Структура на границата Мохо в югозападна България в близост до сеизмичните станции VTS, KKB, MMB

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The Moho's structure in southwest of Bulgaria beneath the seismic stations VTS, KKB and MMB
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The modernization of the Bulgarian Seismological Network completed in December 2005 enabled application of modern techniques of analysis of the velocity structure in Bulgaria. This study presents the first results from application of the receiver function technique to Bulgarian data. The Receiver functions were computed using scripts written on Seismic Handler program by Sodoudi and Yuan. The Western part of Bulgaria is characterized with mountains, river valleys and small fields between the mountains. Two stations of the network Musomishte (MMB) and Krupnik (KKB) were chosen in south-west of Bulgaria and also station Vitosha (VTS) which is close to Sofia and known as the station with lowest noise. These sites are located in areas of complex tectonic structures manifesting high seismic activity during recent years. As starting models we used shear wave velocity models for the territory of Bulgaria, obtained in Raykova, 2004.
For the study were used earthquakes in epicentral range 30 - 95^{o} and with a magnitude between 5,5-5,7 and 7,5 and with clear P-onset. All earthquakes from the end of 2005 to the summer of 2010 were examined and after deleting of bad traces a good azimuthal covering was reached.
From the seismic surveys and gravimetric measurements the Moho depth for the territory of Bulgaria is determined between 30 km and 50 km. The crust is shallower in the north part of the country and thicker in the south-western part. The obtained results delineated a complex structure of the Moho near station Vitosha and confirmed existence of a thicker crust near station Musomishte. Further detailization of the structure of the Moho boundary could be done after estimation of receiver functions for other stations of the network.