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## EMPIRICAL GREEN'S FUNCTION DECONVOLUTION APPLIED FOR VRANCEA EARTHQUAKES OCCURRED IN THE LAST TEN YEARS

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### Abstract

The Vrancea seismogenic area, located at the South-Eastern Carpathians in Romania, is generating extreme destructive subcrustal earthquakes in Europe. The largest events generated in the last ten years in the Vrancea subcrustal domain occurred on May 14, 2005 (01:53, 45.64°N, 26.53°E, h=149 km,  $M_w = 5.5$ ), April 25, 2009 (17:18, 45.68°N, 26.62°E, h=110 km,  $M_w = 5.4$ ) and October 6, 2013 (01:37, 45.67°N, 26.58°E, h=135 km,  $M_w = 5.2$ ). The purpose of the present paper is to determine the seismic source parameters of these events using the Empirical Green's function deconvolution and spectral ratios techniques. To this aim, we selected a set of empirical Green's functions in association with the three main events, as co-located events with similar focal mechanism. The large number of high-quality waveforms recorded for the main shock-EGF pairs provides a good database to constrain source parameters, even though the events are relatively small and are recorded practically in the far field. The seismic moment - source radius scaling and stress drop values range, match well the results as previously obtained on larger data sets.

*Keywords:* relative deconvolution techniques, source parameters, subcrustal earthquakes, Vrancea

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