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December 2011 – January 2012 seismic sequence in Southern Carpathians, Romania

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The seismicity at the contact between the Getic Depression and the Southern Carpathians is part of the overall seismicity characterizing the contact of the Moesian Platform and the South Carpathians orogen. The December 2011 – January 2012 earthquake sequence occurred close to Tg-Jiu city provides the best data set for the seismic activity in the region. The seismic source parameters are estimated for 15 events of the sequence using the empirical Green's function and spectral ratios techniques. We selected 3 main events and 12 associated collocated small events as empirical Green's functions to calculate the spectral ratios and determine the relative source time functions. Estimates of the source duration and corner frequency imply stress drop values in the range of 6 – 112 MPa. Relative small radius of the source and high stress drops suggest an intraplate type behavior. The scaling relationships investigated comply well with similar relationships in other regions in the world and in other seismogenic areas in the Southern Carpathians region.