



Reevaluation of the macroseismic effects of the 23 January 1838 Vrancea earthquake

M. Rogozea (1), Gh. Marmureanu (2), and M Radulian (3)

(1) National Institute for Earth Physics, Magurele, Romania (mrogozea@infp.ro,), (2) National Institute for Earth Physics, Magurele, Romania (marmur@infp.ro), (3) National Institute for Earth Physics, Magurele, Romania (mircea@infp.ro)

The aim of this paper is to analyze the great event that occurred on 23 January 1838 (magnitude 7.5 in the Romanian catalogue). Valuable information has been collected from original or compiled historical sources, such as chronicles and manuscripts on that time, and related books and reports. The historical data are critically analyzed and, on the basis of our investigation, we showed the degree of significance of the earthquake parameters, as resulted from the effect distribution. The pattern of the intensity data points as reevaluated for this historical earthquake is compared with the pattern of instrumentally recorded major earthquake of 4 March 1977, the two events assumed to be similar as hypocenter location, source parameters and rupture propagation. We make also a comparative investigation for the attenuation relationship in case of Vrancea earthquakes, using historical data vs. instrumental data. Implications for the seismic hazard assessment are finally discussed.