Seismic waves attenuation of measurable Vrancea zone earthquakes

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Abstract. The paper presents the results of studying of ground acceleration attenuation functions for Vrancea zone deep focus earthquakes with a magnitude less 6.0 within a narrow north-eastern sector from the zone at distances more than 300 km. Attenuation of the peak ground acceleration at the individual sections of the route Vrancea – IRIS OBN station is approximated by a individual functions. It is shown that for a rough estimation of seismic effect of earthquakes of from the Vrancea zone is acceptable to use an empirical relationship obtained by F.F. Aptikaev. For more accurate estimation it needs to be modified by adding a constant, whose value depends on the specific conditions of NPP sites. It is shown that results of data analysis on moderate earthquakes can be extrapolated towards the earthquake of maximum possible magnitude for Vrancea zone and used to estimate the maximum seismic effects at the sites of existing and planned nuclear power plants.

Keywords: Vrancea zone, seismic hazard, the ground acceleration attenuation function.