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# New site amplification factors for Eurocode 8

M. Abdullah Sandıkkaya (1,2), Sinan Akkar (1), and Pierre Yves Bard (2)

(1) Department of Civil Engineering, Middle East Technical University, Ankara, Turkey, (2) ISTerre, Universite de Grenoble, Grenoble, France

Sandıkkaya et al. (2013) developed an empirical nonlinear site model that makes use of time based average of uppermost 30 m shear-wave velocity profile (VS30) and peak ground acceleration at rock site condition (PGArock at VS30 = 750 m/s). The proposed site model resulted in compatible estimations with the site models of recent global predictive equations. The discussions on NEHRP (BSSC, 2009) and Eurocode 8 (CEN, 2004) site factors showed that the site model is not only valid in application to ground motion prediction equations but also could be used for developing site factors in seismic design codes. These discussions were based on the reference rock model that developed with a global database in the article. In order to remove the regional variability in the reference rock model, the recently developed pan-European predictive equation (Akkar et al., 2013) is used to compute PGArock levels in this study. Consequently, a set of earthquake scenarios are generated and computed PGArock values are used to calculate the site amplification factors. Accordingly, the site factors are elaborately discussed for Eurocode 8 Type-I and II spectra. The immediate observation is that the period-independent site factors are not valid. The short- and long-period amplifications are distinct and become apparent as sites get softer. Thus we propose in this study a new set of amplification factors for generation new code for pan-European region.