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Regional Comprehensive Standard New Seismic Noise Models Extracted from Very Broadband Stations in North Africa and Middle East

It has been two decades since the last comprehensive standard model of ambient earth noise was published (PETERSON, 1993). PETERSON model was updated by analyzing the absolute quietest conditions for stations within the GSN (BERGER et al., 2005; MCNAMARA and BULAND, 2004; RINGLER et al., 2010). Unfortunately, both the original model and the updating models did not include any deployed station in North Africa and Middle East, which reflects the noise levels within the desert environment of those regions. In this study, a survey was conducted to create new seismic noise model from very broadband stations which recently deployed in North Africa and Middle East. Seasonal and diurnal variations in noise spectra were recorded in each station. Moreover new noise model for each individual station had been constructed. Finally, a cumulative new noise model from all the stations is obtained. We compared the new high-noise model (EHNM) and new low-noise model (ELNM) with both the high-noise model (NHNM) and low-noise model (NLNM) of PETERSON (1993). The results of this study could be considered as the first step to create permanent seismic noise models for North Africa and Middle East regions.

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