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### NATURE OF SEISMIC NOISE WAVEFIELD: A LITERATURE SURVEY

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Ambient vibrations measurements have the potential to significantly contribute to seismic risk mitigation, in particular in urban areas (microzonation). Two techniques using such ambient noise measurements are actually used for site effect evaluation: the Nakamura technique indicating the fundamental frequency of soil, and the array techniques leading to the shear wave velocity profile. Fundamental basis of the H/V technique are very tightly connected with the nature of noise wavefield (body or surface waves, relative proportion of Rayleigh and Love waves). Similarly, the inversion of velocity profile also depends on which Rayleigh (or Love) mode is considered (fundamental or harmonics). Therefore, it is important to elucidate the factors influencing the nature and composition of ambient vibrations. Within the framework of the European SESAME project we update a survey of the scientific literature dealing with seismic noise, in order to establish a state of art about the knowledge of the origin and nature of such ambient noise. We highlight different behaviours of noise (in spectral and temporal domain) between periods shorter and longer than one second, i.e. between microseisms and microtremor (respectively from anthropic and natural origin). We synthesize some informations about nature of noise, such as ratios of body waves to surface waves, Rayleigh to Love waves, fundamental Rayleigh waves to higher modes.

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