FRACTAL FEATURES OF SEISMIC NOISE

A. Caserta (1), G. Consolini (2) and P. De Michelis (1)
(1) I.N.G.V.-Rome, (2) I.F.S.I.-Rome

We present experimental observations and data analysis concerning the fractal features of seismic noise in the frequency range from 1 Hz to 40 Hz. In detail, we investigate the 3D average squared soil displacement and the distribution function of its fluctuations for different near-surface geological structures. We found that the seismic noise is consistent with a persistent fractal brownian motion characterized by a Hurst exponent greater than 1/2. Moreover, a clear dependence of the fractal nature of the seismic noise on the near-surface local geology has been found.