



Analysis of microtremors in the La Palma island (Canaries, Spain)

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We present an analysis of microtremor measurements recorded during a field campaign realized in the summer of 2006 in the La Palma island (Canaries, Spain). We used two short period seismic arrays, one with six and other with 12 channels, with different geometrical distributions of sensors. The array apertures were variable going from 10 up to 100 m and were deployed in 23 selected sites that covered roughly the full island. The arrays recorded the vertical component of microtremor at each site during at least one hour, whereas in the centre of the arrays both vertical and horizontal motions were registered. In order to obtain estimates of the soil structure of the sites we applied different analysis methods to these data. The high resolution frequency-wavenumber (HRF-K) method, the HVSR (horizontal to vertical spectral ratio) and the SPAC technique were used for all the data set, and soil models up to around 100 m were obtained. In general, the lower S wave velocities of the estimated models are around 500 m/s suggesting the absence of significant layers composed of very soft materials. On the other hand, we have tested that the theoretical Green functions obtained from these models are compatible with the experimental Green functions extracted from the correlation of the microtremor between each pair of stations.