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Paula Teves Costa and Luisa Senos

NOISE MEASUREMENTS IN ANGRA DO HEROISMO (TERCEIRA ISLAND - AZORES)

P. Teves-Costa (1,2) and L. Senos (3)

(1) Centro de Geofísica da Universidade de Lisboa, Campo Grande C8 - 6º, 1749-016 Lisboa, Portugal; ptcosta@fc.ul.pt, (2) FCUL, Lisbon, Portugal, (3) Instituto de Meteorologia, Lisbon, Portugal; luisa.senos@meteo.pt

The Azores Archipelago is one of the regions that exhibits higher seismic hazard in Portugal. This is due to its particular location, near the plate boundary between Africa and Eurasia, and the Azores triple junction (together with the North American plate). Several tectonic models were already proposed for this region but they are still in discussion. The 9 islands, divided in three groups, are probably located over the three plates. Reports on seismic and volcanic damaging events date from the beginning of its settlement (15th century). Terceira Island is located in the Central Group and suffered several strong earthquakes. The last big one occurred on January 1st 1980, with magnitude 7.2, and caused several victims and a lot of damage, in particular in Angra do Heroísmo, the island capital. Nowadays Angra do Heroísmo is classified by UNESCO as World Heritage. In order to prevent similar damages in a future earthquake, it would be suitable to quantify the seismic response of this town. With this objective we started to realize a microtremor survey in the town, in order to determine the natural frequency of the soil formations. Using the H/V methodology developed by Nakamura, and processing the data with the software developed within the SESAME project, we performed a map of the natural frequencies for the whole town. Further work, involving the correlation with the damage distribution, will be developed within the frame of the SESAME project.