



## **Ballistic to diffusive transition in the seismic noise-field: a marker for the resonance frequencies of the near-surface geological structures?**

**A. Caserta** (1), A. Govoni (2)

(1) Istituto Nazionale di Geofisica e Vulcanologia - Sede di Roma. (Contact [caserta@ingv.it](mailto:caserta@ingv.it)),

(2) Osservatorio Geofisico Sperimentale - Udine (Contact: [agovoni@inogs.it](mailto:agovoni@inogs.it))

From the analysis of the statistical properties of the recorded time series of the seismic noise-field, emerges that two different dynamical behaviors are present at the same time: the ballistic and the diffusive one. An *ad hoc* field experiment has been designed and realized to separate the two dynamical regimes in the seismic noise records. It is shown that one regime can be predominant in respect of the other, according to the level of the heterogeneities on small scale present on the near-surface geological structures under study. It has seen that the transition ballistic-to-diffusive regime takes place at frequencies that can be thought as resonance frequencies of the site.