

Introduction and objectives of the workshop (N. Theodoulidis and F. Hollender)

The SINAPS@ project (<https://www.institut-seism.fr/en/projects/sinaps/>) aims to explore the uncertainties inherent in databases, knowledge of the physical processes and methods used at each step of the evaluation of the seismic hazard and seismic risk reduction for critical infrastructures.

To this aim during the SINAPS@ project a special vertical accelerometric has been installed in Koutavos Park (Argostoli, Kefalonia), the so-called ARGONET (argonet-kefalonia.org). The ARGONET recorded data since July 2015 as well as those of the future will substantially contribute to the goals of the SINAPS@ project. In following possible research directions using the ARGONET data are given:

- Validation and testing of various site effect estimation methods in linear soil behavior can be done.
- Empirical study of non-linear soil behavior, especially of high acceleration amplitudes (e.g. $PGA > 0.2g$). The high seismicity of Kefalonia makes it very likely for the ARGONET array to capture strong ground motion at different geologic layers and depths in the near future.
- The first published dataset (July 2015 to December 2017) and corresponding metadata offer opportunities for useful site response and 1D/2D/3D wave propagation studies. This dataset provided some promising indication about the increased likelihood of clearly observing nonlinear site response especially in the topmost, softest layers within the next years.
- The detailed knowledge of the dynamic and geometrical properties of the site would allow to test and upgrade 1D/2D/3D wave propagation methods and codes.