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The Athens Acropolis Strong Motion Array

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During the last decades, extensive restoration works through a dedicated "Acropolis Restoration Service" (YSMA) take place in the Acropolis, the greatest sanctuary of ancient Athens. Since 2008, a permanent strong motion array was deployed by the Institute of Geodynamics, National Observatory of Athens (NOA-IG) in collaboration with YSMA. Free field installations were decided at sites showing various characteristics, aiming to investigate differences in geotechnical properties as well as the structure response of Parthenon itself.
The installation phase is presented, with the techniques used to overcome difficulties (i.e. extreme weather conditions, power and communication limitations, restoration works and visitors) and the special care taken for the specific archaeological site. Furthermore, indicative examples of seismic events recorded by the array are analyzed and the complexity of the hill and the monument is made apparent. Among them, the long distance events of Tohoku, Japan 2010 and Van, Turkey 2011, some regional moderate earthquakes in Greece and some weak earthquakes from the vicinity.
Continuous ambient noise monitoring using PQLX software gives some first indicative results, showing a variety of characteristics at installation sites.
Finally, further developments and future steps are presented such as: the extension of the array, the integration of seismic data within the GIS platform of YSMA at the site and the use of strong motion records, in conjunction with data from other monitoring systems operating in Acropolis for the study of specific monuments.