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Swiss AlpArray: deployment of the Swiss AlpArray temporary broad-band stations and their noise characterization

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One of the main actions of the AlpArray European initiative is the deployment of a dense seismic broad-band network, that complements the existing permanent stations. This will ensure a spatially homogeneous seismic coverage of the greater Alpine area for at least two years, allowing a great number of innovative scientific works to be carried out.
Our contribution to the AlpArray Seismic Network consists in the deployment of 24 temporary broad-band stations: three in Switzerland, twelve in Italy, three in Croatia, three in Bosnia and Herzegovina and three in Hungary. This deployment is lead by ETH Zurich and founded by the Swiss-AlpArray Sinergia programme by SNSF, and is the result of a fruitful collaboration between five research institutes. Stations were installed between Autumn and Winter 2015. Our installations are both free field and in-house and consist of 21 STS-2 and 3 Trillium Compact sensors equipped with Taurus digitizers and 3G telemetry sending data in real time to the ETH EIDA node.
In this work, we present sites and stations setting and we discuss in details the characteristics in terms of site effects and noise level of each station. In particular we analyse the power spectral density estimates investigating the major source of noise and the background noise related to seasons, time of the day, human activities and type of installation. In addition we will show examples of data usage – i.e. earthquake locations, noise cross correlations, measures of surface wave dispersion curves.

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