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Correlation between underwater noise level and AIS data in the Gulf of Catania (Sicily)

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NEMO-SN1 is a sea-floor multidisciplinary observatory, managed by INGV and INFN and connected to shore by an electro-optical cable. It is located at a distance of 25 km from the Eastern Sicily Coast, off-shore Catania, at an operative depth of 2100 m.

SN1 is equipped with geophysical and oceanographic sensors that acquire data since June 2012. An array of hydrophones is also installed on NEMO-SN1 detector tower within the SMO project; goals are the long term, real-time monitoring of the acoustic and seismic environmental activity in the deep sea.

The acoustic array will monitor anthropogenic underwater noise variation and, in particular, the component due ship traffic, that has substantially increased over the years in the Mediterranean Sea. The peculiar location of NEMO-SN1, few km off the port of Catania, is optimal to study the correlation between underwater acoustic noise and ship traffic.

Using AIS (Automatic Identification System) we obtained information on vessel characteristics and movements details in the area of the Gulf of Catania. AIS data were correlated with acoustic data acquired from the hydrophone array installed on board the NEMO-SN1 station. Results of this study will be presented.

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