Geophysical Research Abstracts
Vol. 17, EGU2015-13117-4, 2015
EGU General Assembly 2015

Monitoring fin whale (Balaenoptera physalus) acoustic presence by means of a low frequency seismic hydrophone in Western Ionian Sea, EMSO site.

Virginia Sciacca (1,2), Francesco Caruso (1,2), Francesco Chierici (4), Emilio De Domenico (1), Davide Embriaco (3), Paolo Favali (3), Gabriele Giovanetti (3), Giuseppina Larosa (2), Gianni Pavan (5), Carmelo Pellegrino (6), Sara Pulvirenti (2), Giorgio Riccobene (2), Francesco Simeone (7), Salvatore Viola (2), Laura Beranzoli (3), and Giuditta Marinaro (3)

(1) DiSBA, University of Messina, Messina, Italy, (2) INFN - LNS, Catania, Italy, (4) INAF, Bologna, Italy, (3) INGV, Rome, Italy, (5) CIBRA, University of Pavia, Pavia, Italy, (6) INFN, Bologna, Italy, (7) INFN, Università di Roma 1, Roma, Italy

In 2012, the NEMO-SN1 multidisciplinary seafloor platform was deployed in the Gulf of Catania at a depth of 2100 m. By using the low bandwidth seismic hydrophone SMID DT405D (1Hz <f< 1kHz), installed aboard the platform, we acoustically monitored for the first time, over a yearlong campaign, fin whales (Balaenoptera physalus) acoustic activity in the area. The presence of a genetically isolated population of fin whales has been confirmed in recent years in highly productive areas of the Mediterranean Sea. The species acoustic activity has also been monitored in the past within the Western Mediterranean. Despite this, still very little is known about the routes the population follows seasonally throughout the whole basin and, particularly, in the Ionian area. The most common vocalizations attributed to this population are known as “20Hz pulses” and they are grouped in two main types of calls: type “A”, downsweep (17Hz <f< 23Hz) lasting about 1-1,5 seconds and type “B” with constant 18-20 Hz frequency lasting about 0,8-1 seconds. From July 2012 to May 2013, low frequency (<1kHz) acoustic data were continuously acquired, saved in 10 minutes long files and analyzed through a MATLAB® software developed for the study, which automatically saves the spectrogram of the band below 50Hz. About 7.000 hours of acoustic recordings have been investigated through spectrograms analysis. The low frequency hydrophone installed aboard the NEMO-SN1/SMO station allowed the detection of both types of the Mediterranean fin whale acoustic signals, recorded for the first time in the area. Furthermore, our results show a previous unknown acoustic presence of fin whales offshore Eastern Sicily throughout all seasons of the investigated year. The new long-term multidisciplinary projects connected to “KM3NeT” and “EMSO” will give us the chance to better understand the animals’ occurrence in the area and to investigate their acoustic behavior and population dynamics.