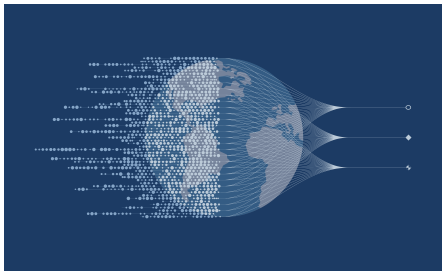

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in shipping sound for all European seas from 2016 to 2050

Monitoring and modeling of ship sound are crucial due to its large contribution to underwater ambient sound. The NAVISON (Navis Sonus) project, sponsored by the European Maritime Safety Agency (EMSA), addresses this issue by calculating hindcast (2016–2023) and forecast (2030, 2040, 2050) shipping sound maps for all European seas. These maps focus on two decidecade frequency bands (63 Hz and 125 Hz), key frequencies for assessing Good Environmental Status under the EU Marine Strategy Framework Directive. Ship source levels, computed along AIS ship tracks using a novel source model (PIANO), a semi-empirical model for continuous broadband source levels from cavitation and machinery, are used as inputs for a sound mapping tool based on the parabolic equation method. Forecast ship sound predictions include the combined effects of mitigation measures based on several scenarios involving expected changes in ship traffic, and vessel design and operation. The data, owned and maintained by EMSA, quantifies the contribution of the different vessel categories to ambient noise, evaluates mitigation performance and enables regional comparisons of shipping sound. The methodology developed for NAVISON is equally applicable in other basins, such as the northwest Pacific Ocean, thus making it relevant to characterising CTBTO measurements at Wake Island.

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