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## jUMP-Modeling-Portal: a new service for simulating sound propagation in the ocean

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Effects of anthropogenic noise on marine species were already recognized as a threat by the United Nations. Therefore, considering the 14th development goal (conservation and sustainable use of the oceans and marine resources), the proper management and reduction of underwater noise is a relevant contribution to the aimed sustainable management and protection of marine and coastal ecosystems. By avoiding significant adverse impacts, strengthening their resilience, and taking action for their restoration, it is possible to achieve healthy and productive oceans.

The Portuguese coast is subjected to increasing pressure due to maritime transport, recreational and touristic activities, fishing efforts, and operating industrial units. Underwater noise is one of the adverse sub-products of these activities, with detrimental consequences to noise-sensitive species and the related ecosystems. Therefore, to address this theme and in the scope of the project “jUMP - Joint Action: A Stepping-stone for underwater noise monitoring in Portuguese waters”, LNEC has developed a modeling portal to simulate the sound propagation in the ocean and support the monitoring activities along the Portuguese Exclusive Economic Zone (EEZ).

In the present publication, the authors introduce a web portal that enables the users to set sound propagation simulations on-demand, with specific configurations such as the depth of the sound source, the frequency, and source and receptor positions. The jUMP modeling platform retrieves the oceanic stratification and bathymetry data from European data services like Copernicus and EMODnet to establish the underwater sound velocity profiles used by the model. The service will be freely available to the research community and incorporates several technologies and services from the European Open Science Cloud (e.g., Federated authentication, Workload managers, Infrastructure Managers, and computational resources). The authors believe that the platform can enhance the research on our oceans’ underwater sound propagation thematic area.

### Any relevant links

<http://jump-app.lnec.pt/index/>

### Topic

EOSC Compute Platform

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