

Special Issue

Cavitation Dynamics, and Underwater Radiated Noise in Ocean Engineering

Message from the Guest Editors

Considerable maritime transport and commercial shipping growth in the oceans has increased anthropogenic ambient underwater noise (URN) levels, which have been surging over the last several years. The significant increase in anthropogenic URN has negatively influenced the marine ecosystem since several marine mammals utilise sound actively as a primary source for their fundamental living activities such as communication, interaction, etc. Therefore, the rapid increase in ambient noise levels causes alteration in the behaviour of marine organisms. Despite these significant harmful effects of URN on marine fauna, this topic has been given low priority in the shipping industry compared to other sustainability topics such as greenhouse gas (GHG) emissions. However, the increased concern for URN has escalated, and it is becoming of great interest. In this regard, IMO has recently accepted the proposal to review the existing guideline to mitigate ship-induced URN. Among the different noise sources within a ship, a cavitating propeller is the most important, and dominates the overall URN. Thus, cavitation dynamics are of the utmost importance for accurately predicting URN.

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