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## An Investigation on The Effects of Various Flow Parameters on the Underwater Flow Noise

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The prediction and reduction of underwater noise is commercially, militarily and ecologically a very critical issue for maritime industry. Machine noise, propeller noise and flow noise are the main components of underwater noise for submerged bodies. Especially at high flow velocities, flow noise becomes dominant source of underwater noise radiated from these bodies.

In this paper, the effects of the fluid temperature, salinity of the fluid and fluid velocity on the underwater flow noise are investigated, numerically. A circular cylinder is selected for the validation studies of the noise model used in the acoustic analyses. The flow characteristics are obtained by solving governing equations of fluid using Computational Fluid Dynamics (CFD). The turbulence is modelled by using a two-equation turbulence model. The Ffowcs Williams and Hawkins (FW-H) noise model is applied to predict the sound pressure levels at the receiver points defined various locations, numerically. The monopole, dipole and quadrupole sound sources are taken into consideration for acoustic analyses.

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