

Test platform in controlled environment for the evaluation of ship noise and vibration mitigation solutions

Record number : OPR-721

Overview

RESEARCH DIRECTION

Olivier Robin, Professeur - Department of Mechanical Engineering

INFORMATION

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ADMINISTRATIVE UNIT(S)

Faculté de génie
Département de génie mécanique

LEVEL(S)

2e cycle

LOCATION(S)

Campus de Sherbrooke

Project Description

Project Background and Objective:

Underwater noise generated by marine traffic is considered a noise pollution, and one of the main factors affecting habitat quality for marine organisms. Measuring underwater noise from a vessel at sea is complex and costly, but so is implementing mitigation solutions on an existing vessel. Guides list existing solutions for the reduction of underwater noise, but the concrete effectiveness of these solutions is rarely well defined, as well as design or dimensioning rules that could be used by ship owners or their engineering teams.

This project consists first in designing and manufacturing a simplified version of a scaled ship (model), and then to carry out with this platform an evaluation of various solutions of underwater noise reduction (controlled tests in basin). This research will allow a better evaluation of the effectiveness of these solutions and a better understanding of their implementation on real ships. This project is conducted in partnership between the University of Sherbrooke and Innovation Maritime, an applied research center affiliated with the Institut maritime du Québec.

Roles and Implications of the Master's Student:

The student will be specifically in charge of (i) carrying out an exhaustive bibliographical study on current means of underwater noise reduction, (ii) participating into the implementation of controlled vibroacoustic sources on the platform and (iii) participating in the choice of different mitigation measures and in the concrete evaluation of their effect (vibroacoustic measurements and analysis on structure and in basin).

This subject allows the development of skills in applied research, vibroacoustics and noise control. The master's degree will be ideally divided between the CRASH laboratories at the University of Sherbrooke (1st year) and the Innovation Maritime laboratories (2nd year), in order to provide a global training experience shared between a university research environment and a technology transfer center. Complementary and free courses are also available through the «Centre Compétences Recherche + ».

**Discipline(s) by
sector**

Sciences naturelles et génie

Génie mécanique

Funding offered

Yes

Partner(s)

Innovation Maritime

The last update was on 13 March 2024. The University reserves the right to modify its projects without notice.