

Course Name: Underwater radiated noise from marine Propellers

Lecturers: Michele Viviani, Tomaso Gaggero, Giorgio Tani; e-mail: michele.viviani@unige.it ; tomaso.gaggero@unige.it; giorgio.tani@unige.it

Duration: 12 hours

Credits: 3

Lingua: Italian; in case foreign students are present, lectures will be in English.

Aims of the course: The course will be devoted to the problem of underwater radiated noise from marine propellers. At first, basic information about propeller functioning and cavitation will be covered. Then, the propeller characterization as a noise source will be considered, showing typical noise spectra related to propeller non-cavitating functioning and different cavitation phenomena. The problem of measurements of propeller noise in model scale (with the various scaling issues) and of the whole ship in full scale (considering noise propagation and existing international standards) will be then addressed. During the course, at least two hours will be devoted to a visit of the cavitation tunnel during model test of a propeller.

Topics:

1. Marine Propeller: functioning principles and cavitation
2. Propeller characterization as a noise source – Typical noise spectra
3. Model scale measurements
4. Scaling issues
5. Full scale measurements
6. Noise propagation

Exam:

Brief exercise and Oral exam

Riferimenti bibliografici:

Lecture notes