

**Topic: AI-Supported Propeller Noise Prediction**

**Description**

Noise caused by commercial shipping is a major maritime environmental pollution. Cavitating propellers have the highest contribution. In order to reduce the noise emissions of a ship, the emitted noise should be taken into account as a design parameter during the design process.

As part of an internship at the SVA, a propeller noise prediction tool for the design stage is to be developed based on hydroacoustic measurements. The idea is to use AI-supported methods to predict noise spectra depending on the propeller main parameters and the ship’s wake field. The SVA's data basis for hydroacoustic measurements should be supplemented independently by systematic experiments in the cavitation tunnel (variation of propellers, wake fields and operating points). The experiments should be prepared, carried out and evaluated independently by the intern under the guidance of the SVA employees. The SVA provides the hydroacoustic measurement equipment for this purpose. The subsequent AI-supported programming is carried out by the intern.

**Schedule**

| Week          | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| Introduction  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Experiments   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Evaluation    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Programming   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Documentation |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |

**Requirements**

- Basic understanding of measurement technology
- The interest in practical work on the cavitation tunnel
- Prior knowledge of AI-supported programming (desirable)