

Topic	Interplay between waves and seasonal ice cover
Topic is suitable for	<ul style="list-style-type: none"> • practical works of bachelor students • graduation thesis of bachelor students • practical works of master students • graduation thesis of master students
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Annotation	<p>The region where ice and waves interact is the marginal ice zone (MIZ). The lack of sufficient amount of wave data in the MIZ hinders our knowledge on how storm-generated waves propagate through MIZ. But this information is crucial for safe navigation of vessels and is needed when oil spills occur in ice. Setting up experimental work in the Polar Regions is logistically and financially a demanding task. However, as high waves and ice cover are concurring in the Baltic Sea (BS), it forms a natural experimental and numerical test bed for analysis of wave-ice feedback. The first objective is to in parallel measure the wave propagation in the MIZ and the corresponding ice parameters (floe size, thickness, concentration) in the BS. The second objective is to synthesise the measurement results and develop a conceptual model for wave-ice interactions, which is then implemented step-by-step (third objective) in a coupled wave-ice-circulation model and applied in hindcasts and forecasts.</p>
Expectation for candidate	Good interpersonal skills. Interest in physics, mathematics and programming.