

Topic	Optical remote sensing of water bodies
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>Optical remote sensing has become one of the main methods of aquatic research. From observation of the water leaving reflectance, we can determine different water quality parameters: chlorophyll <i>a</i>, colored dissolved organic matter, suspended sediments, etc. The differences in spectral characteristics of optical parameters make it possible to quantify these parameters separately using remote sensing techniques. However, optical complexity of the Baltic Sea causes problems in remote sensing algorithm development.</p> <p>The launch of Sentinel-2 and Sentinel-3 satellites provide new opportunities to improve Baltic Sea monitoring. However, it is essential to validate satellite data of new space missions with field measurements before the estimation of water quality parameters. Moreover, it is necessary to validate existing remote sensing algorithms as well as to develop new and more accurate image processing methods/algorithms for retrieving water quality parameters in the Baltic Sea.</p> <p>The specific topic of the practical work or thesis depends on a level of the study and preferences of a student.</p>
Expectation for candidate	Interested in remote sensing and/or marine optics: basic knowledge in data analysis and statistics; some programming (e.g. Python) experience; collaborative working and self-learning abilities.

