

## PROJECT

# Measurements, modelling and parameterization of joint wind- and current-driven transport in marine surface layers

## *Tuule, lainete ja hoovuste koosmõjus mere pinnakihi toimuva transpordi mõõtmine, modelleerimine ja parametrizeerimine*

**Funding:** National (Estonia)

**Duration:** Jan 2016 - Dec 2016

**Status:** Complete



### Objectives:

The project is designed as a joint field measurement and numerical modelling program. Surface drifters will be used to measure the flow velocity at different depths within the surface boundary layer.

Each drifter will be equipped with a GPS tracker to record the position, and an accelerometer to measure the local wave conditions. Drifters will be used to measure both the absolute rate of transport and relative dispersion between drifters deployed at the same depth.

Numerical models simulations will be conducted using a model modified using a wave mixing parameterization scheme suggested from recent literature, with the aim to investigate the suitability of such a scheme in conditions with a shallow surface boundary layer.

The outcome of the project is expected to improve our knowledge about dynamics of shallow surface boundary layers and the numerical modelling representation of these processes.

**Other funding sources:** Estonian Research Council

### Lead Organisation:

**Tallinna Tehnika Uelikool**

**Address:**

Ehitajate tee 5  
19086 TALLINN  
Estonia

### Technologies:

Computer-aided design and engineering  
Simulation toolkit for retrofitting ships with new technologies

**Development phase:** Research/Invention

**STRIA Roadmaps:** Other specified  
Water transport (sea &

**Transport mode:** inland)

**Transport sectors:** Freight transport

**Transport policies:** Other specified

**Geo-spatial type:** Other