

Using land-based stations for air-sea interaction studies

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In-situ measurements representing the marine atmosphere are taken at ships, buoys or stationary moorings, or on land-based towers. By using fixed towers motion correction can be avoided. One needs to make sure the measurements represents the sea area.

Measured gas fluxes and turbulence properties from the land-based marine ICOS station Östergarnsholm have shown to well represent open sea marine conditions for specific wind direction intervals. Data from other sectors are usually discarded as they are disturbed by coastal zone. Data is defined according to the following categories:

- 1) Marine data representing open sea
- 2) Disturbed wave field resulting in physical properties different from open sea conditions and heterogeneity of water properties in the foot-print of the flux tower.
- 3) Mixed land/sea footprint of the tower, very heterogeneous conditions and a very active carbon production/consumption.

There are great differences between the data for the different categories, are evaluated and will be discussed.

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