



**TOWARDS A JOINT EUROPEAN RESEARCH INFRASTRUCTURE
NETWORK FOR COASTAL OBSERVATORIES**
Project meeting, Rome, 29 February – 1 March 2012

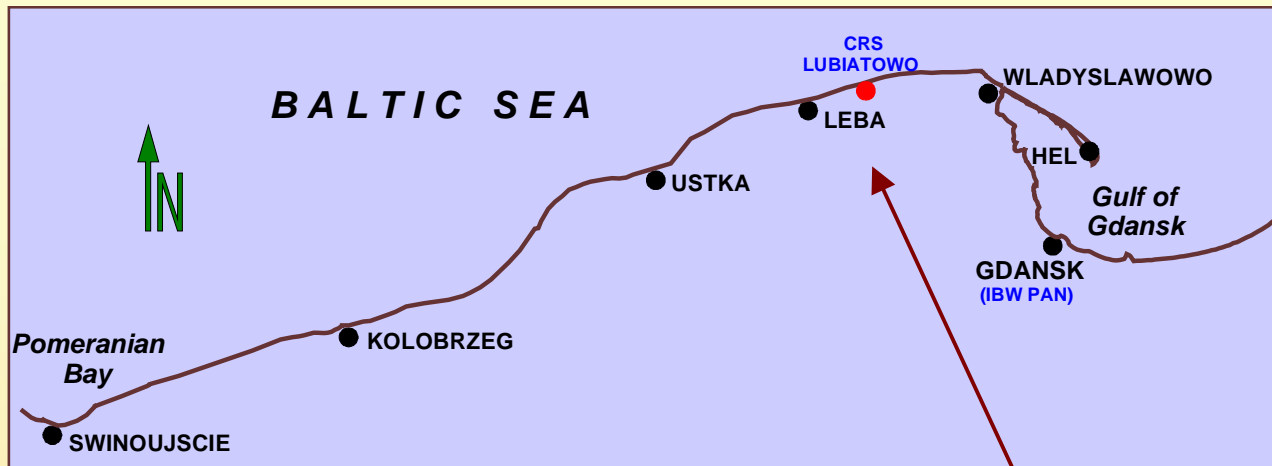
Coastal Research Station in Lubiatowo

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- 1. History and scope of measurements**
- 2. Conditions, constraints and exemplary results**
- 3. Funding opportunities**
- 4. Possibilities and prospects**



Location of the Polish coast and the IBW PAN Coastal Research Station (CRS) at Lubiadowo in the south Baltic Sea

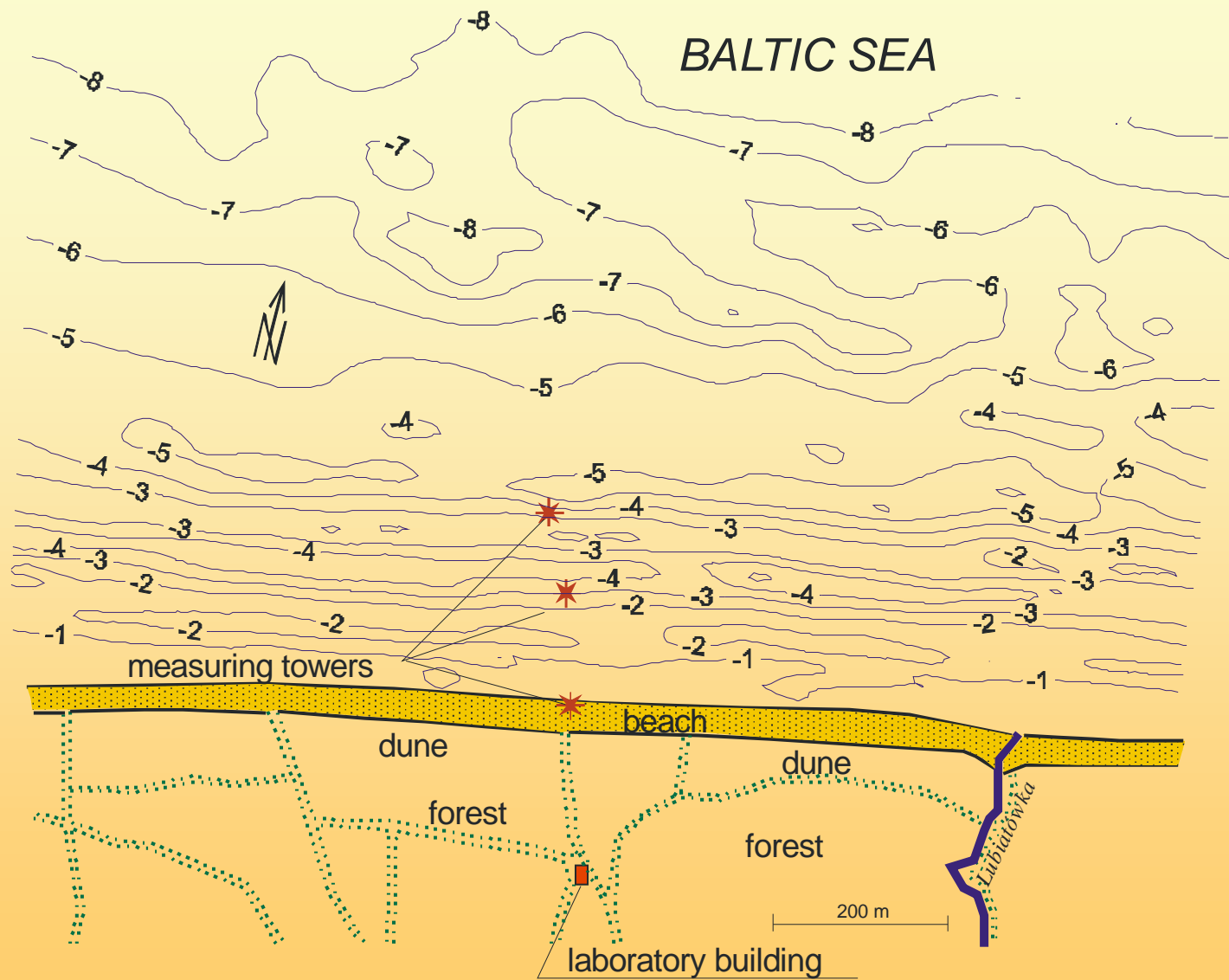
Establishment and first steps

- 1963-1965 – first field campaigns (amphibious vehicle, light tripods, ...)
- 1968 – adaptation of the old coastal rescue station
- 1970 – measuring towers (\Rightarrow 600 m offshore, $h_{max}=7$ m)
- 1970s – few mass-produced devices, many prototype sensors and apparatuses
- 1980s – more modern electronic devices, e.g. *Interocean* current meters
- ...

Presently available equipment

The following IBW PAN equipment is available to be used at CRS Lubiatowo:

- wave buoys Directional Waverider Mk. II, Mk. III (produced by Datawell BV, the Netherlands);
- string electric wave gauges (manufactured at IBW PAN, Poland);
- two-component electromagnetic current meters (produced by Valeport Ltd., UK and other companies);
- ADCPs Workhorse Monitor 1200 (RDInstruments, USA);
- laser Doppler particle size analyser LISST-100 (Sequoia Scientific Inc., USA);
- salinity, temperature and pressure sensors;
- soil samplers;
- wind gauges;
- GPS devices: two sets comprising base and rover stations;
- echo-sounders Odom Hydrographic Systems, USA (single-beam, multi-beam);
- sub-bottom profiler StrataBox (SyQwest Inc., USA);
- geodesic equipment (electronic total station).

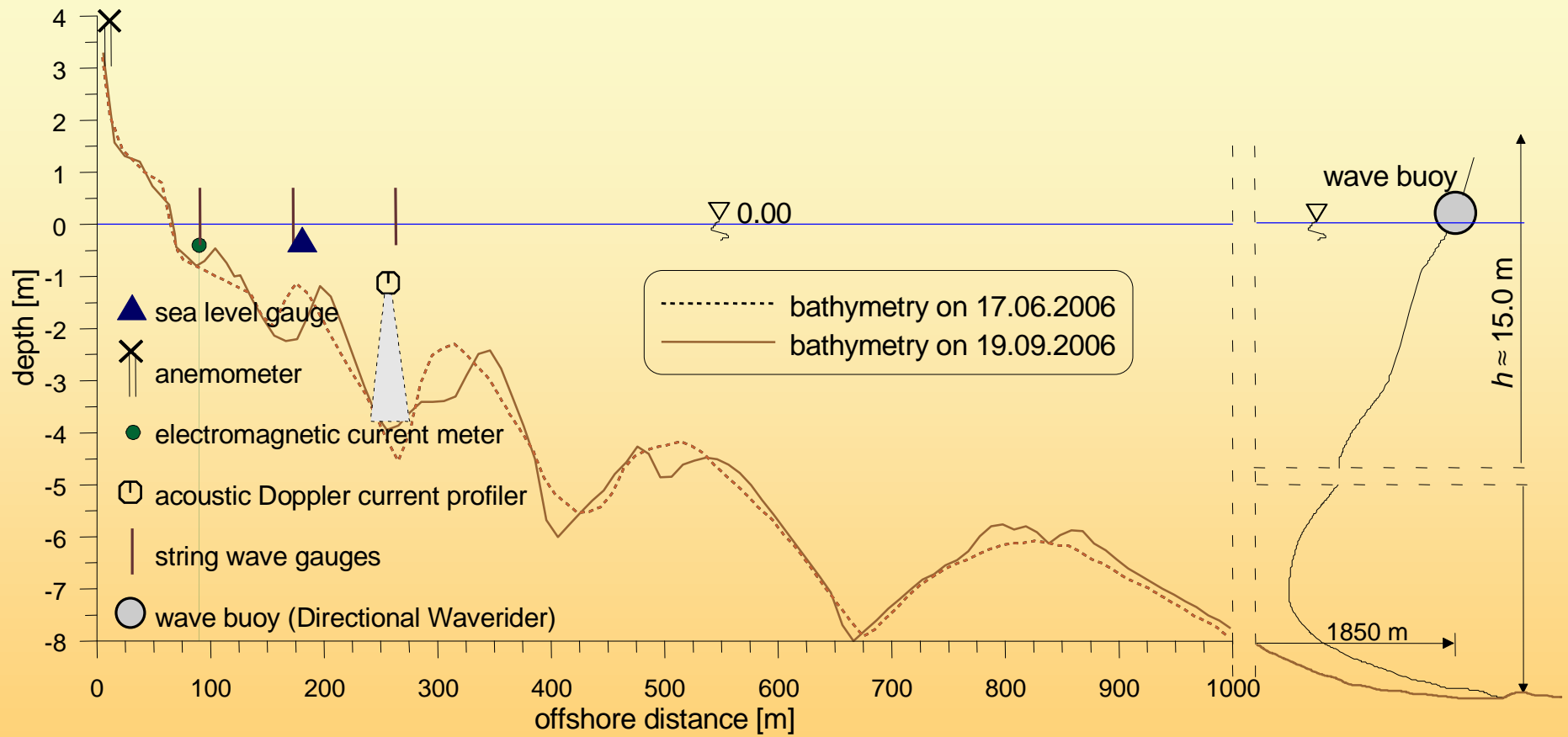


Layout of CRS Lubiatowo site

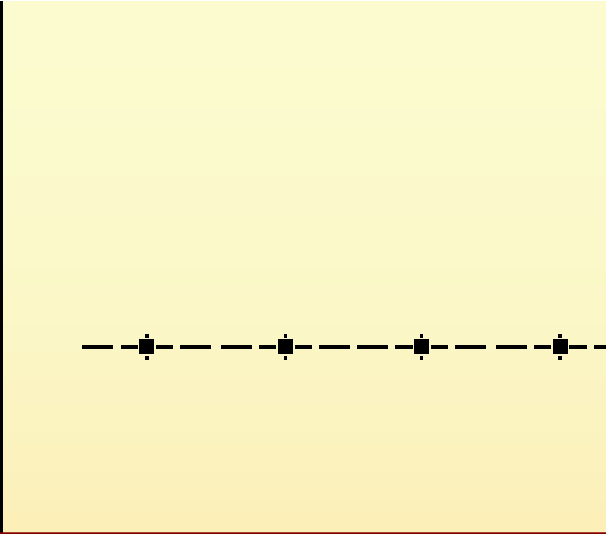


*Laboratory building and measuring towers
of CRS Lubiato*

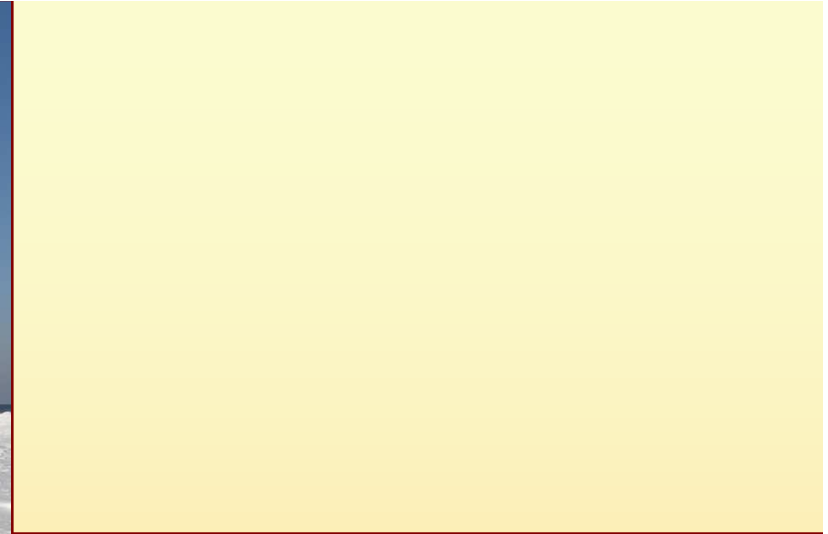




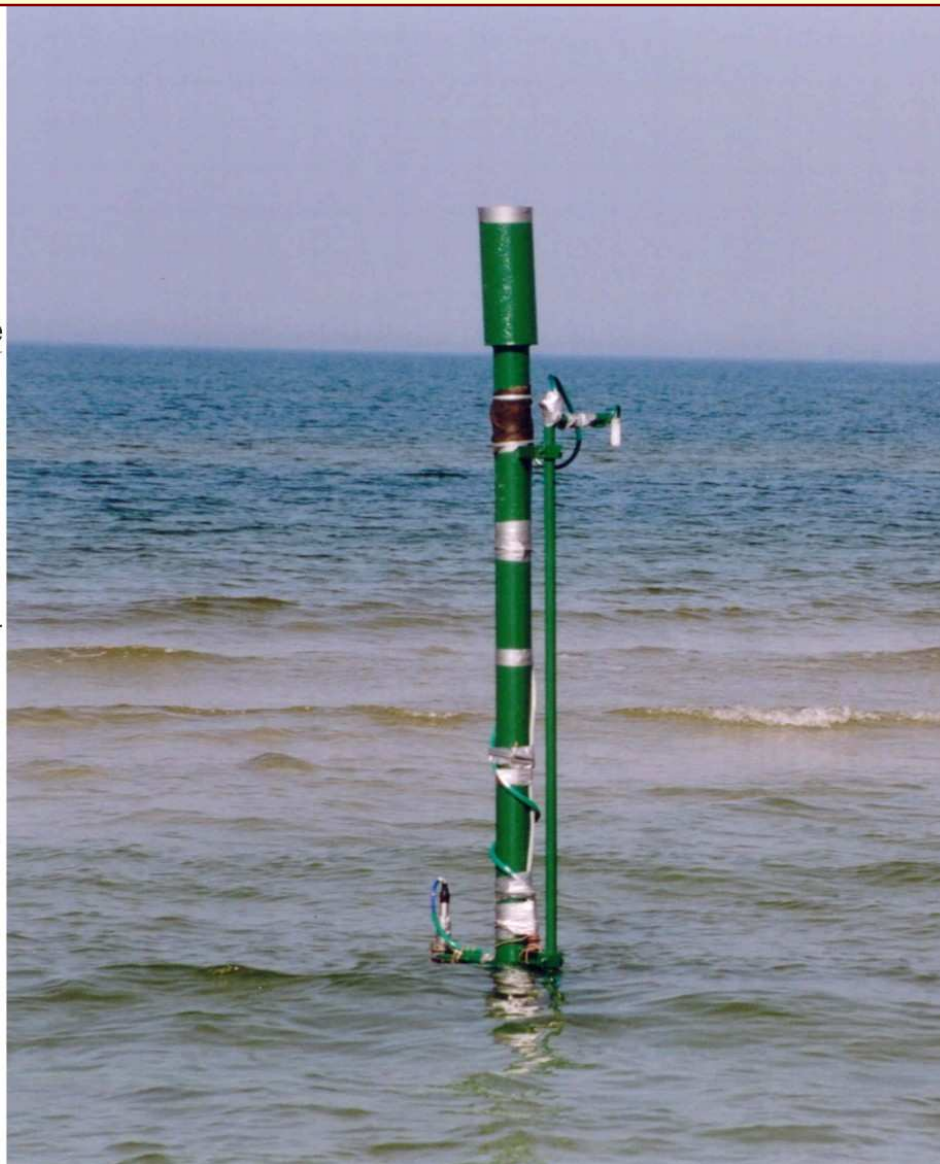
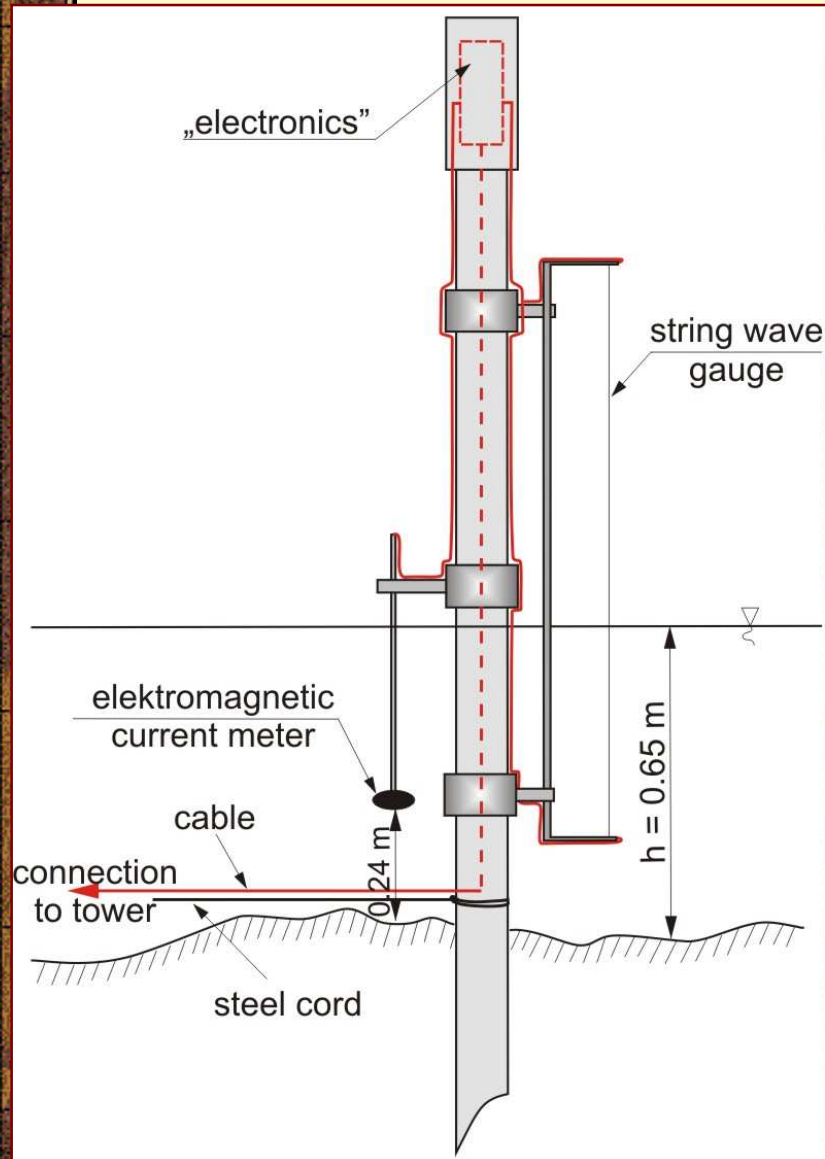
Shape of measuring profile at CRS Lubiatowo with typical layout of equipment



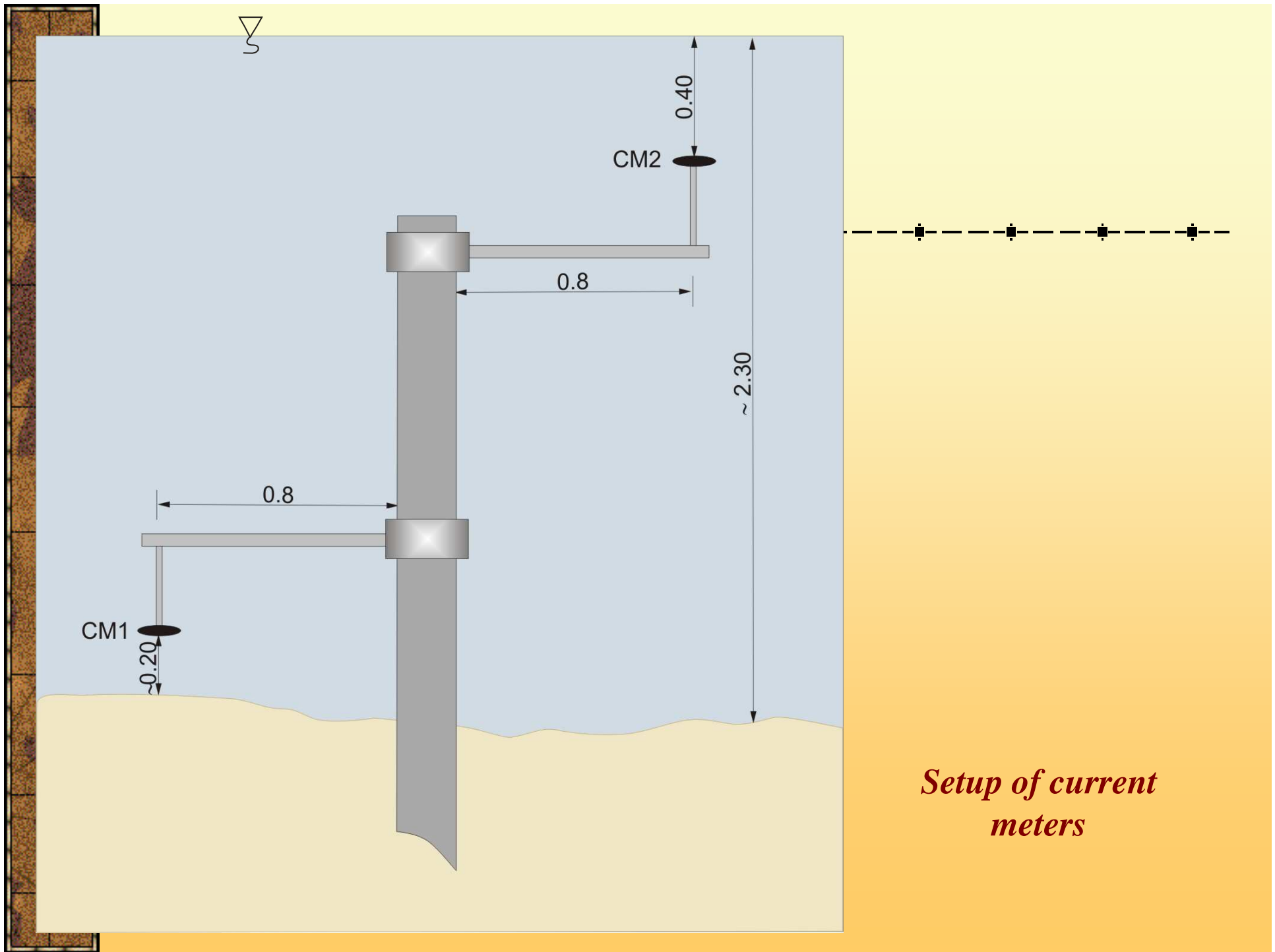
Seasonal ice phenomena



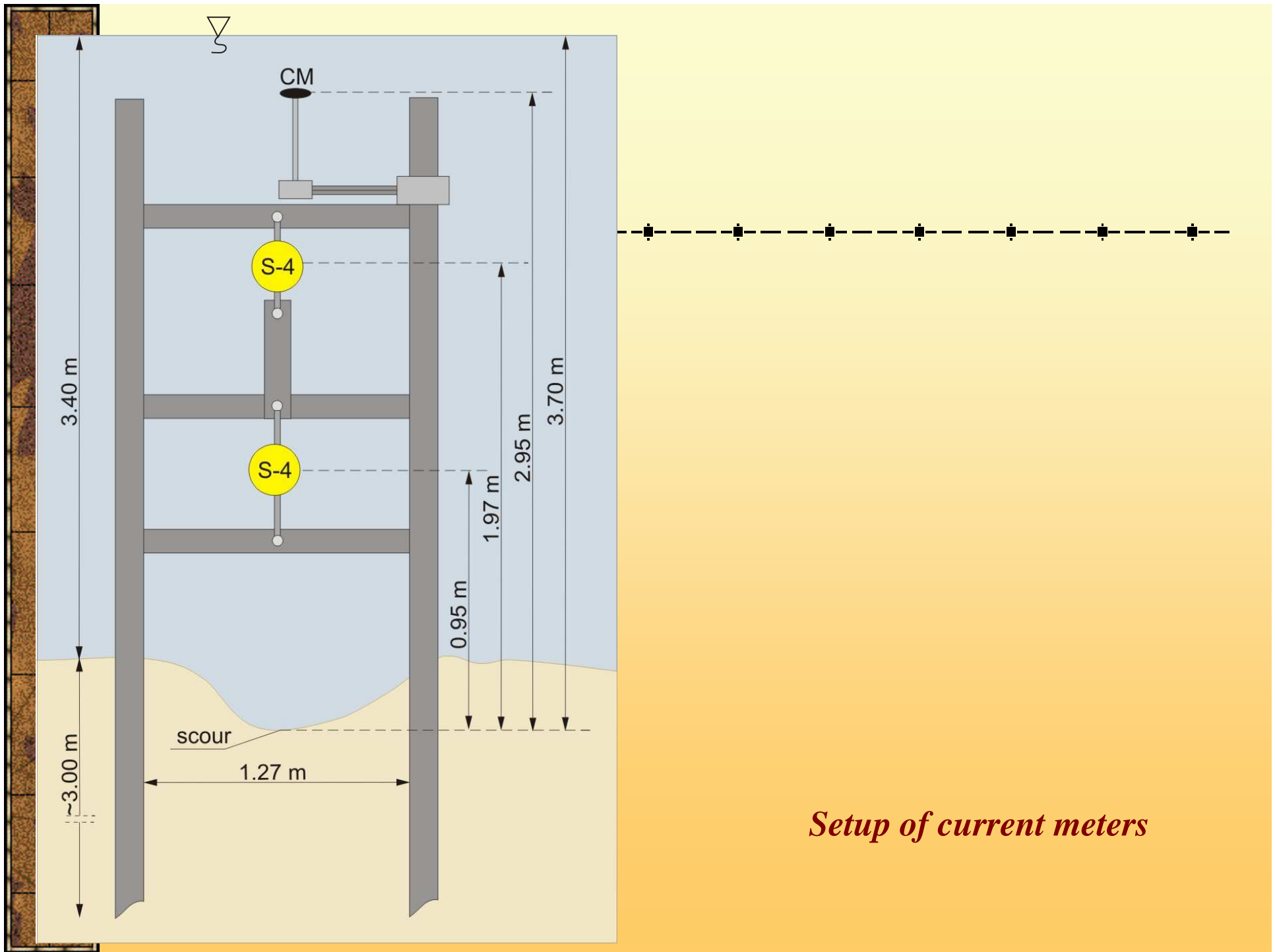
*Seasonal ice phenomena
(load on structures)*



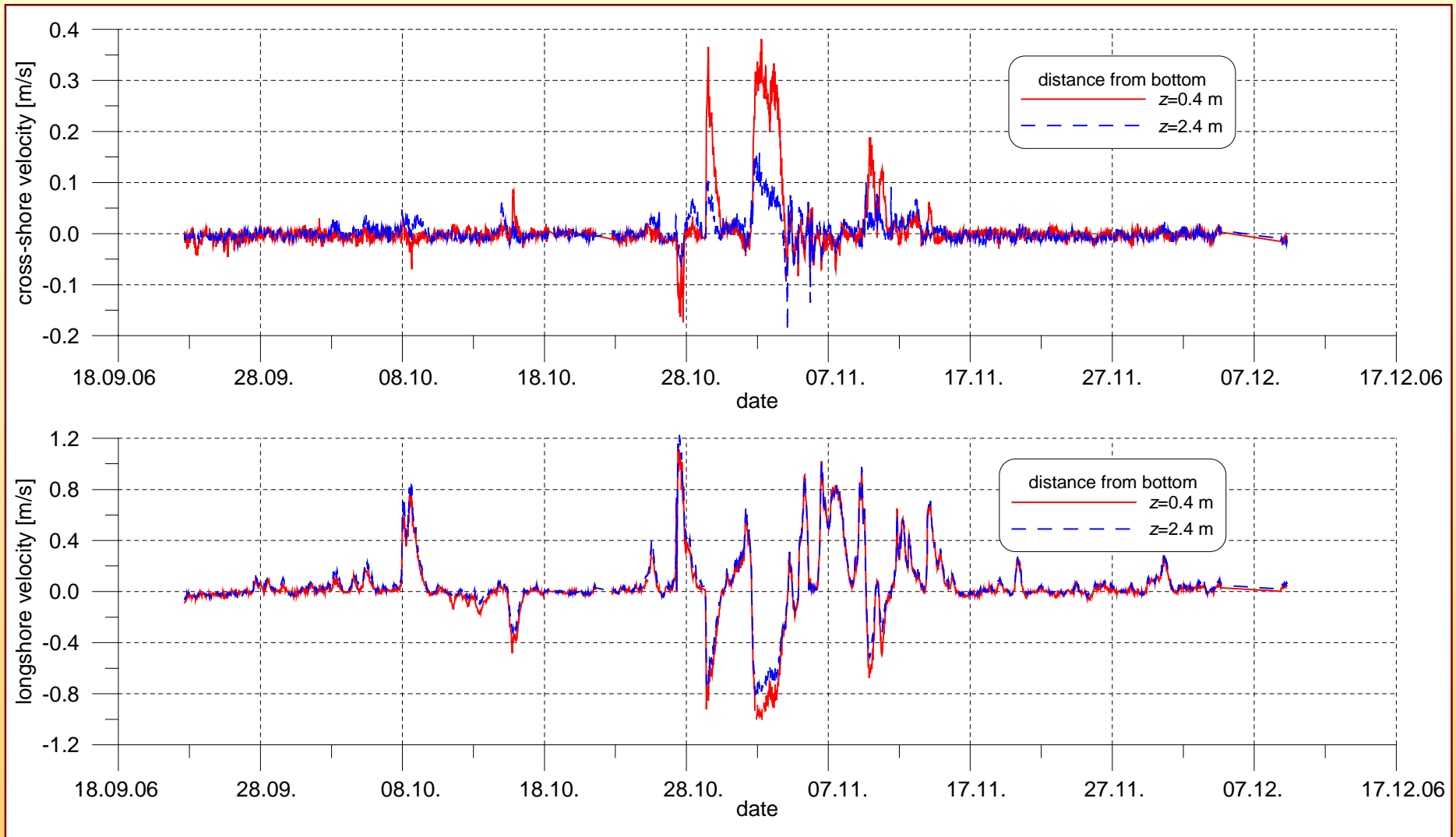
Nearshore measuring station (wave gauge + current meter)



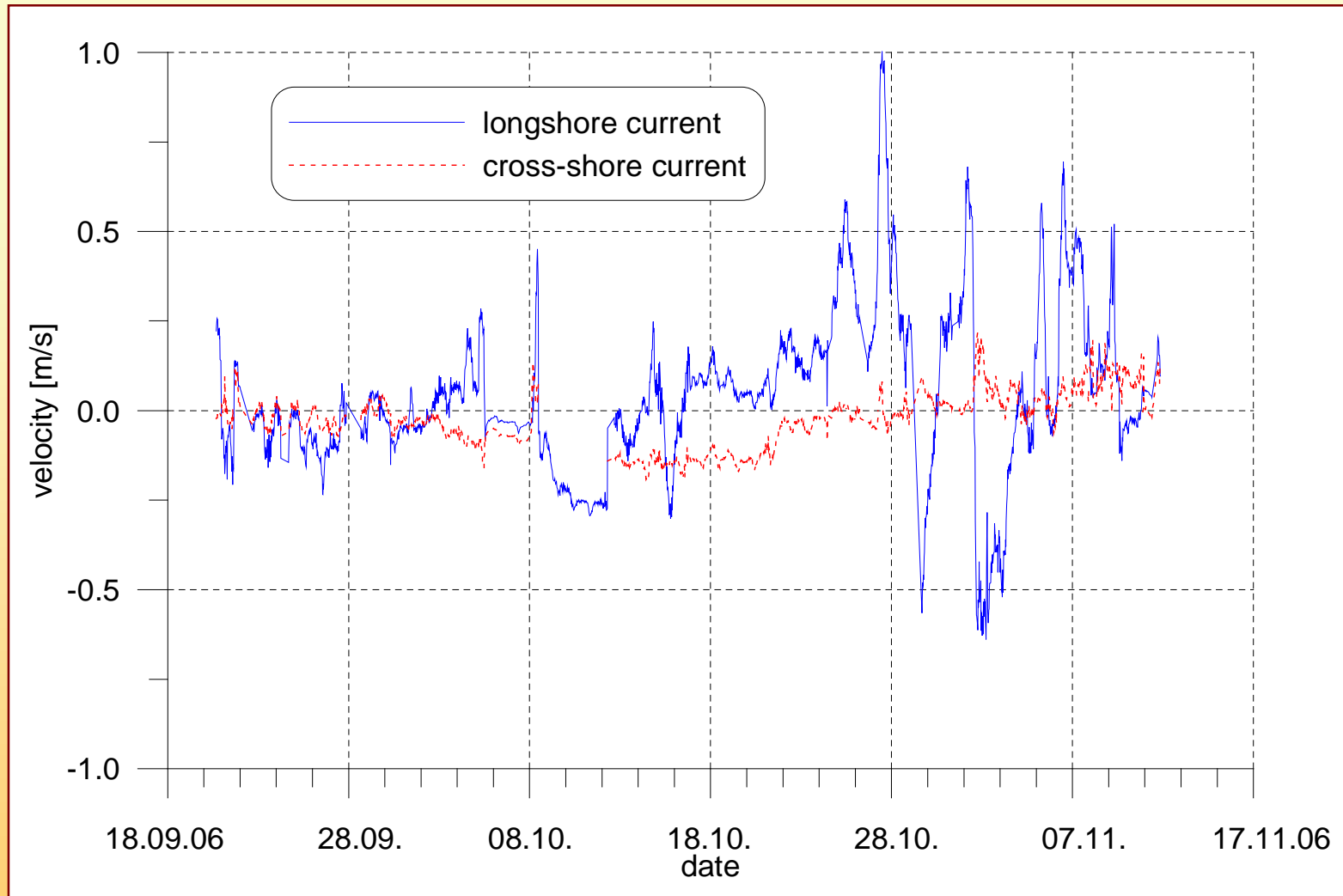
Setup of current meters



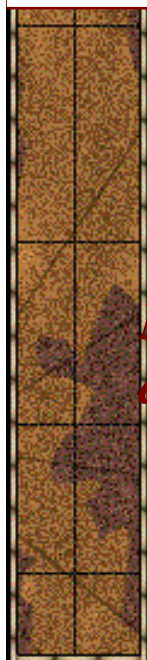
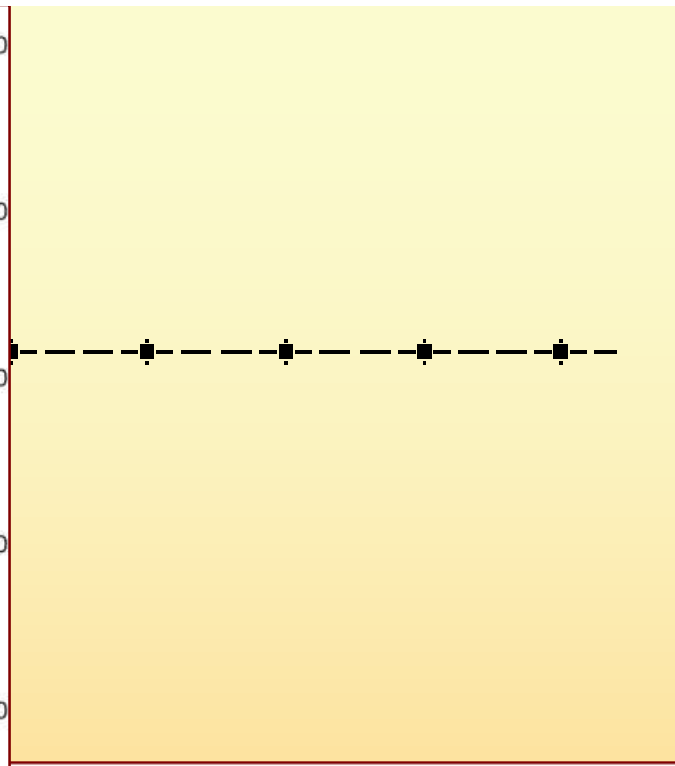
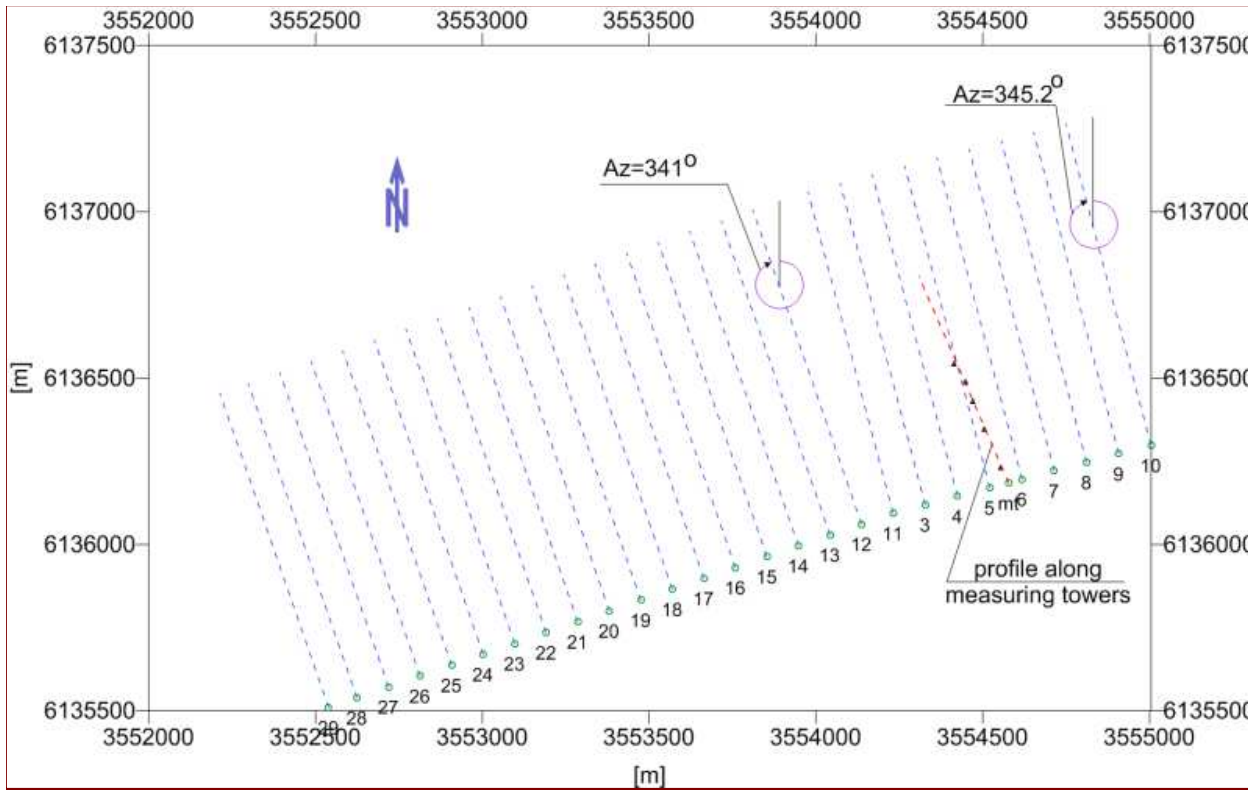
Setup of current meters



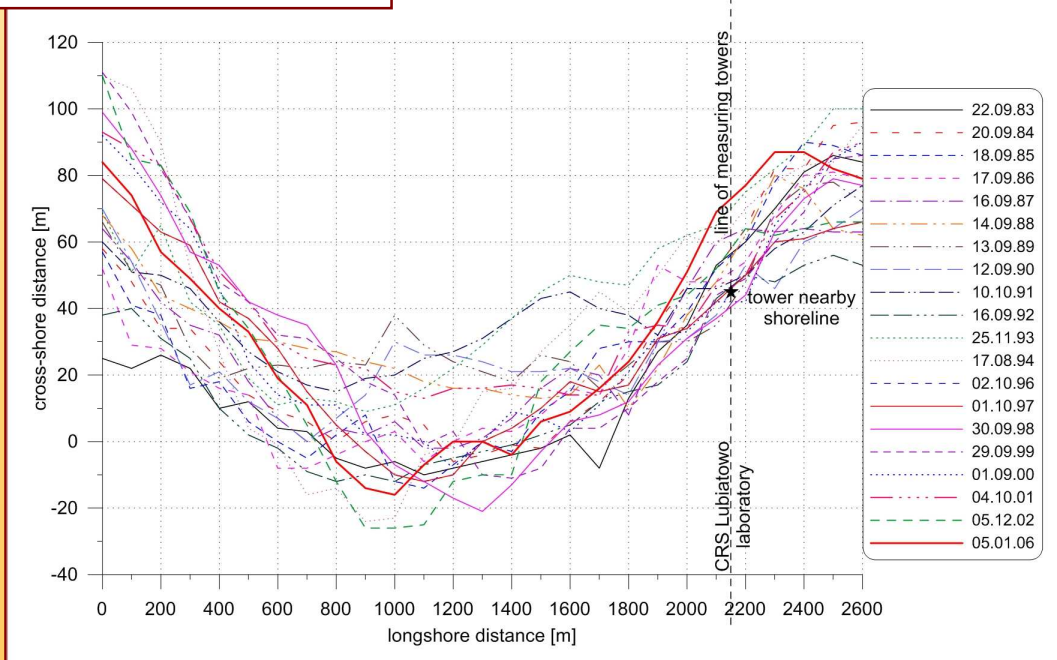
Time-averaged velocities of cross-shore and longshore currents measured in water column 200 m from the shoreline (water depth of 4.0-4.4 m) at CRS Lubiatowo in 2006

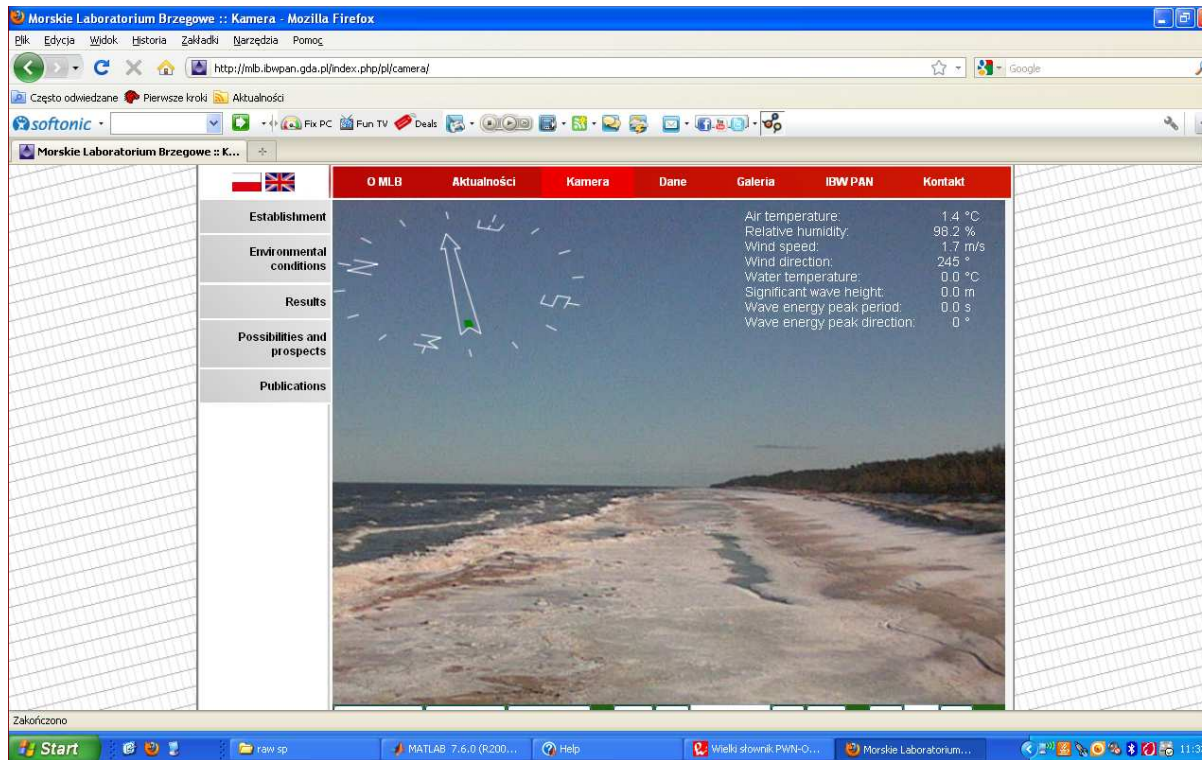


Time-averaged nearshore shallow-water (at depth of 0.5-0.7 m) velocities of cross-shore and longshore currents measured at CRS Lubiato in 2006



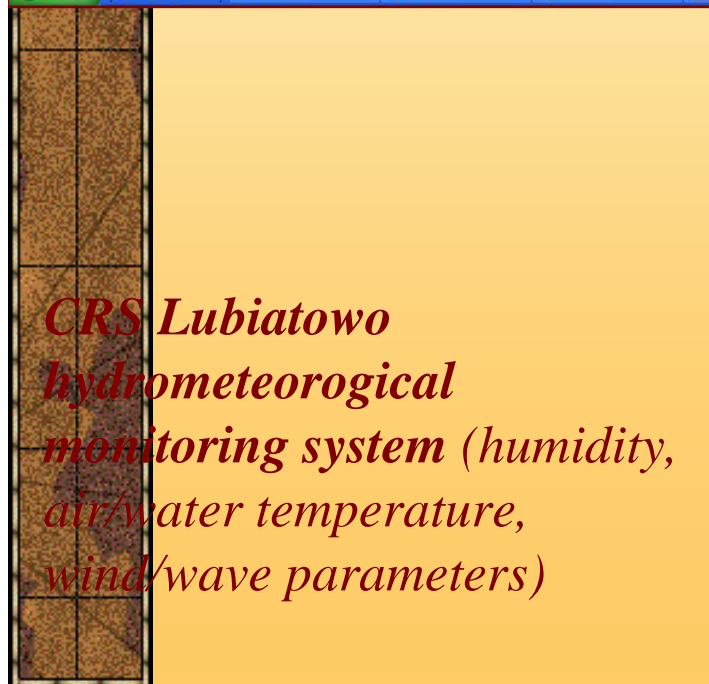
Monitoring of shoreline and dune toe position



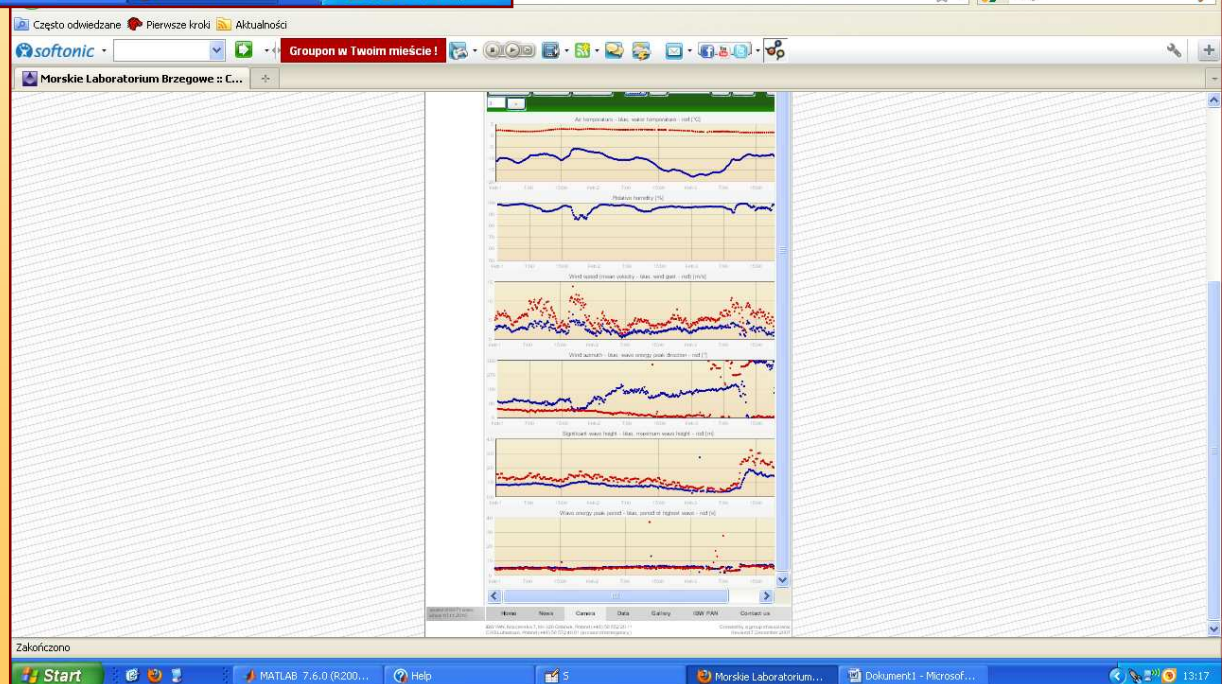


CRS Lubiatowo video monitoring system:

<http://mlb.ibwpan.gda.pl/index.php/en/camera/>



CRS Lubiatowo hydrometeorological monitoring system (humidity, air/water temperature, wind/wave parameters)



Funding opportunities of CRS Lubiatowo (at present and in prospects)

National sources

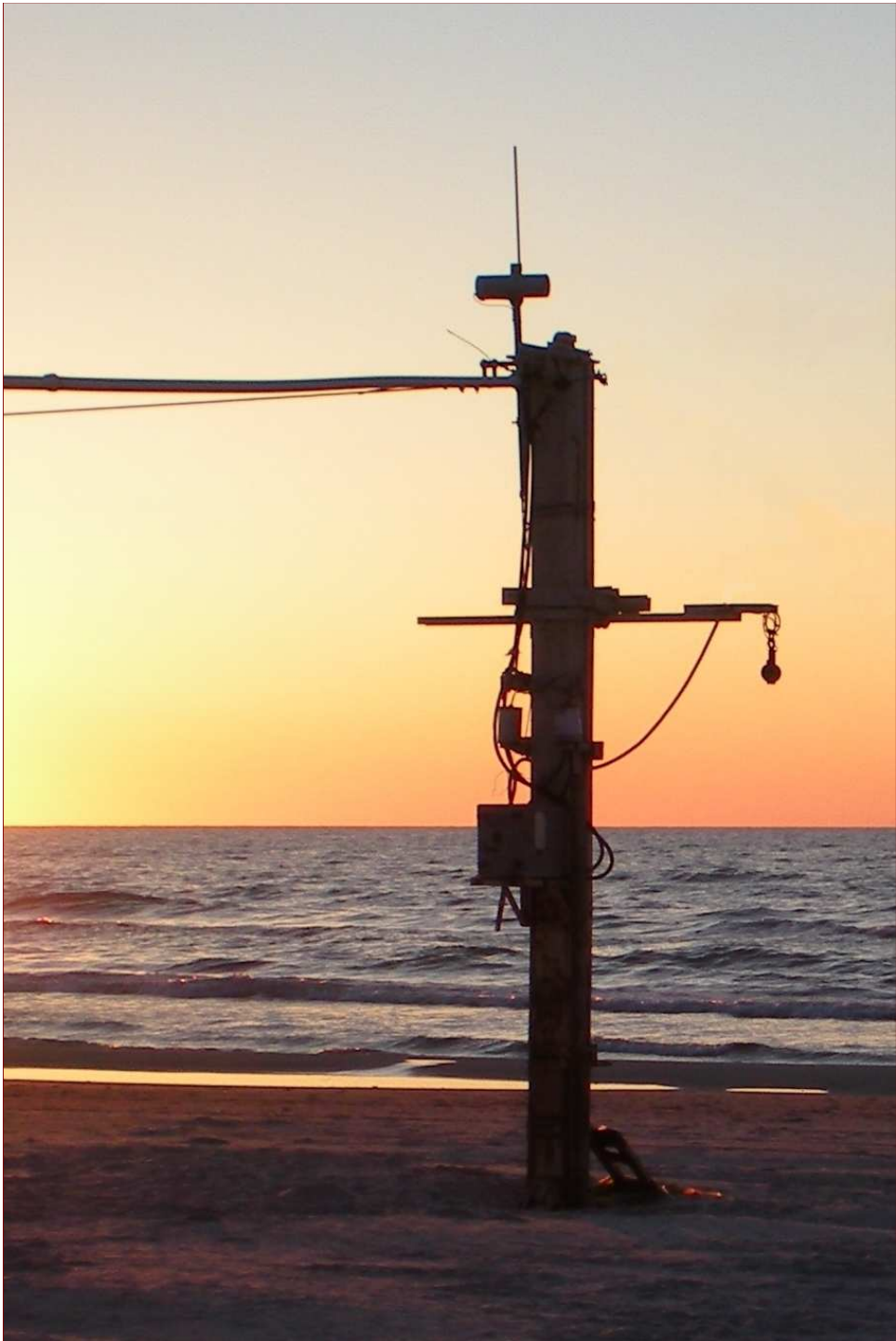
- ❖ statutory research of IBW PAN (sponsored by the governmental funds controlled by the Ministry of Science & Higher Education – MNiSW),
- ❖ MNiSW projects (accepted within competitions of applications),
- ❖ joint research projects co-funded by other Polish scientific institutions,
- ❖ commercial contracts with domestic companies, local authorities and governmental coastal administration (limited funds),
- ❖ inclusion of CRS into the Polish state monitoring system.

International sources

- ❖ EU and other international programmes (including TNA ventures),
- ❖ bilateral research programmes,
- ❖ educational-research ventures (summer schools & conferences + presentations of field surveys, etc.),
- ❖ co-sponsoring by foreign institutions.

Plans and prospects

- *use of temporary structures;*
- *wider implementation of autonomous devices;*
- *reconstruction of the measuring tower ($h=5$ m, 250 m offshore);*
- *modernisation of the data transmission and power supply systems;*
- *set up of new regulations (organisational, legal) to provide more regular funding;*
- *establishment of the permanent monitoring entity.*



Thank you for attention