Ice Beacon
on Meereisportal.de

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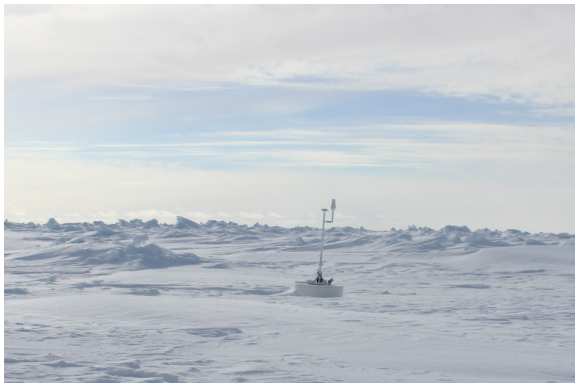

Photo: AWI

Description of autonomous platform

Ice Beacons are designed to measure temperature and conductivity (to derive salinity) of sea water. They consist of a surface unit, a sensor cable outfitted with two CT sensors in selected depth (in our case one in 5 and one in 10 m depth). All data plus the GPS position are sent via Iridium.

Property name	**Property value**
Manufacturer	MetOcean, Halifax, Canada
Manufacturer name	Ice Beacon CT
Data provider	JouBeh Technologies, Halifax, Canada
Weight	approx. 41 kg
Deployment type	Installation on sea ice with sensor cable hanging through a 10 cm diameter hole
Power supply	Lithium batteries (life time >1 year)
Data transmission interval	30 min

Parameters and accuracy

Parameter	**Sensor**	**Accuracy**
Body temperature (°C)	YSI 44032	±0.1 °C
Water temperature (°C)	SBE 37IM	±0.002 °C
Conductivity (S/m)	SBE 37IM	±0.0003 S/m
Position (from GPS)	Jupiter 12 (Navman)	± 10 m

Data Processing

The data set has been processed and contains quality flags for different kinds for erroneous data. Flag values are the sum of individual error codes. The value of 0 refers to no error.

Quality flag, position: The geographic position is flagged +1 if the drift velocity, as derived from the GPS longitude and latitude, exceeds a threshold of 10 deg latitude or 50 deg longitude per time step; +2 if the position exceeds extreme values, such as longitude > 360 deg; +4 if the position is exactly 0.0.

How to cite

1. The reference for the (data portal of) Meereisportal.de is:

Grosfeld, K.; Treffeisen, R.; Asseng, J.; Bartsch, A.; Bräuer, B.; Fritzsch, B.; Gerdes, R.; Hendricks, S.; Hiller, W.; Heygster, G.; Krumpen, T.; Lemke, P.; Melsheimer, C.; Nicolaus, M.; Ricker, R. and Weigelt, M. (2016), Online sea-ice knowledge and data platform <www.meereisportal.de>, Polarforschung, Bremerhaven, Alfred Wegener Institute for Polar and Marine Research & German Society of Polar Research, 85 (2), 143-155, doi:10.2312/polfor.2016.011.

2. Please include the following phrase into the acknowledgment, substituting PARAMETER and DATE according to your usage:

Autonomous sea ice measurements (PARAMETER) from DATE to DATE were obtained from https://www.meereisportal.de (grant: REKLIM-2013-04).

3. Buoy data is archived at PANGAEA, a Data Publisher for Earth & Environmental Science, after the buoy has stopped sending data. Please refer to the buoys DOI.