

Autonomous Ocean Flux Buoy



Flux Buoys (Autonomous Ocean Flux Buoy, AOFB) are designed to measure turbulent fluxes of heat, salt and momentum in the ocean mixed layer just below the sea ice. These instrument systems are custom designed and fabricated at the Naval Postgraduate School and Moss Landing Marine Laboratories (for more details see: [NPS AOFB Program](#)). Additionally, they measure vertical profiles of currents down to 80m depth, local basal melt rates using an upward-looking acoustic altimeter, GPS position, water velocity, temperature and salinity 3m below the sea ice surface.



Buoy description

Manufacturer:	Tim Stanton, NPS and MLML, Monterey, CA, United States
Manufacturer's name:	AOFB
Data provider	NPS AOFB Program, Monterey, CA, United States
Weight	Approx. 200 kg
Deployment type	Installation on sea ice floes at 3m depth, normally with a co-located Ice Tethered Profiler and Ice Mass Balance Buoy

Technical Details

Measured parameters	Sensor
- water temperature (°C)	30 micro K resolution fast thermistor
- eddy correlation fluxes at 3m depth	Digital Acoustic Travel Time current sensor and fast T/C sensors
- 3m depth temperature, conductivity and salinity	Precision thermistor and inductive conductivity cell
- water velocity components every 2m to 80m depth	Teledyne RDI WHM300 ADCP
- GPS position	
Measurement interval	2 hourly
Data transmission	2 way Iridium data transfers 2/day
Data transmitter	NAL Iridium
Power supply	Li ChI primary batteries, solar power, wind power