

Meteorological and sea surface data series for the northern North Sea Experiment

A meteorological buoy from the Netherlands Institute of Sea Research (NIOZ) was deployed at the main mooring site A on Rig G for the duration of the experiment.

Complementary meteorological and sea state data for PROVCESS northern North Sea Experiment were also obtained from Marine Weather Stations located on Beryl and Frigg oil platforms in the northern North Sea and operated by the UK Met Office and the Norwegian Meteorological Institute respectively. The combined data sets contain information on wind speed and direction, air temperature, atmospheric pressure, relative humidity, sea surface temperature, significant wave height and wave period from 01 September to 30 November 1998.

This report contains the qualifying documentation and header information associated with the following data series extracted from the BODC database:

Series Reference	Data Type	Latitude deg min	Longitude deg min	Start Date yyyy/mm/dd	Sea Floor Depth m	Sensor Depth m
529189	CC	59 33.0 N	001 32.0 E	1998/09/14	110.0	0.0
529190	CC	59 54.0 N	002 06.0 E	1998/09/01	105.0	0.0
529208	CD	59 20.6 N	000 59.7 E	1998/09/06	110.0	0.0

where Data Type CC = Meteorology -unspecified
 CD = Meteorology -meteorological data buoy

Parameter	Unit	Parameter code	Comments		
			met buoy (529208)	Beryl (529189)	Frigg (529190)
Dry bulb temperature	deg. C	CDTASS01	none	caution	none
Atmospheric pressure	mbars	CAPHZZ01	not available	none	not available
Relative humidity	percent	CRELSS01	none	not available	caution
Wind direction	deg. T	EWDASS01	caution	none	none
Wind speed	m/sec	EWSBSS01	caution	none	none
Gust wind speed	m/sec	EGTSSS01	none	not available	not available
Significant wave height	m	GTDHZZ01	not available	none	none
Mean wave period	seconds	GTZAZZ01	not available	caution	none
Sea surface temperature	deg. C	TEMPPR01	not available	not available	none
Net solar radiation	W m ²	NRADR101	none	not available	not available
Solar radiation	W m ²	CSLRR101	none	not available	not available
Platform heading	deg. T	HEADCM01	none	not available	not available

BODC Data Documentation
PROVESS Project MAS3-CT97-015

The following single character qualifying flags may be associated with one or more individual parameters within a data cycle:

<u>Flag</u>	<u>Description</u>
	Unqualified
<	Below detection limit
>	In excess of quoted value
B	Beginning of CTD Down/Up Cast
D	Thermometric depth
E	End of CTD Down/Up Cast
K	Uncertain/suspect value
L	Improbable value - originator's quality control
M	Improbable value - BODC quality control
N	Null value
O	Improbable value - user quality control
P	Trace/calm
Q	Indeterminate
R	Replacement value
S	Estimated value
T	Interpolated value
U	Uncalibrated
W	Control value
X	Excessive difference

INFORMATION FOR BODC SERIES REF. NO. 529208 (continued)

BODC's data series processing and quality control

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BODC screen both the series header information and the parameter values in the data cycles. Header information is inspected for irregularities such as 1) infeasible values, 2) inconsistencies between related information (for example: between depth of meter and sea bed; between times of mooring deployment and start/end of data series; between the length of record or number of data cycles, the cycle interval, the clock error and the period over which it accrued; between originator's comments on meter/mooring performance, data quality and parameters measured, and the parameters present in the data cycles. Documents are written by BODC highlighting irregularities which cannot be resolved.

Data cycles are inspected using time series plots of all parameters. Values suspected of being of non-natural origin may be tagged with BODC flag for suspect value.

3) Meteorological Monitoring Buoy

The meteorological monitoring buoy consisted of a large surface toroid buoy secured at the sea floor by an anchor chain and surmounted by a light metal tower. The structure of the tower included a sail and a metal rail for instrument mounting (at an approximate distance of 2 m above sea surface).

Instrumentation:

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- Aanderaa wind direction sensor 3590 (averaging) and buoy orientation sensor 2864:

The wind direction sensor consists of a light wind vane mounted on a pivot on top of a housing. The housing is fitted with a built-in compass which is magnetically coupled to the vane. True wind speed measurement is obtained by combining measurements from the wind direction sensor and from the buoy orientation sensor.

Manufacturer's specifications for the wind direction sensor:

Threshold speed: < 0.3 m/s
Accuracy: better than +/- 5 degrees
Temperature: -40 to +50 degree C

Manufacturer's specifications for the buoy orientation sensor:

Accuracy: better than +/- 5 degrees
Temperature: -40 to +50 degree C

- Aanderaa wind speed sensor 2740:

This sensor measures the average and maximum wind speed (gust) during the sampling interval. It consists of a three cup rotor on top of an aluminium housing. The rotor bearings consist of two stainless steel ball bearings protected by a surrounding skirt. The lower end of the skirt is furnished with a magnet. The magnet's rotation is sensed by a reed switch located into the housing. The sensor has two output signals: average and maximum wind speed (gust). The arithmetic mean of the wind is obtained regardless of sampling interval providing the sampling interval is between 4 seconds and 36 hours. The maximum wind speed is the highest speed occurring over a two-second period at any time during the sampling interval.

Manufacturer's specifications:

Threshold speed: 30-50 cm/s
Range: up to 76 m/s
Accuracy: +/- 2% or +/- 20 cm/s which ever is greater
Operating temperature: -40 to +50 degree C

INFORMATION FOR BODC SERIES REF. NO. 529208 (continued)

- Aanderaa relative humidity sensor 3445:

This sensor consists of a RH probe (model 3447) protected from direct sunshine and rains by a radiation screen.

Manufacturer's specifications:

Range: 0 to 100% relative humidity (RH)
Accuracy: +/- 3% RH
Resolution: 0.1%
Operating temperature: -30 to +50 degree C

- Aanderaa air temperature sensor 3455:

This sensor consists of a platinum resistance thermometer protected from heating by direct sunshine by a radiation screen.

Manufacturer's specifications:

Range: -44 to +49 deg. C
Resolution: 0.1% of range
Accuracy: +/- 0.1% of range

- Aanderaa solar radiation sensor 2770:

This sensor measures incoming solar and sky radiations. The sensor employs a high sensitivity thermistor bridge which measures the temperature rise of a black surface under a borosilicate glass dome.

Manufacturer's specifications:

Wavelength: 0.3 to 2.5 microns
Range: 0 - 2000 W/m²
Accuracy: > +/- 20 W/m²
Resolution: 4 W/m²

- Aanderaa net radiation sensor 2811 (Pyrradiometer):

This sensor measures the difference between incoming and outgoing radiation (both sunlight and infrared) at the Earth's surface. The sensor consists of a radiation detector composed of two surfaces which absorb/emit radiation, inside an aluminium housing covered at one end by a teflon dome. One surface is exposed to radiation and the other is shielded inside the sensor housing. A thermistor-resistor network senses the temperature difference between the two surfaces of the detector giving a measure of net radiation.

Manufacturer's specifications:

Wavelength: 0.3 to 60 microns
Range: +/- 2000 W/m²
Accuracy: +/- 1% of full scale
Resolution: 4 W/m²
Operating temperature: -30 to +50 deg. C

The following additional documents apply to this series:

Data Activity Document: [77568](#)

Project Document : [77554](#)

PARAMETERS

Parameter : AADYAA01 (TIME)
Description : Day number
Method : Computation
Units : Days (1760/01/01 = day 0)

Parameter : AAFDZZ01 (TIME)
Description : Day fraction (GMT)
Method : Computation
Units : Days

Parameters AADY/AAFD are usually supplied as date and time (GMT) or as parameters ADATAA01 and AHMSAA01.

Parameter : ADATAA01 (TIME)
Description : Date in format yyyyymmdd
Method : Computation
Units : Years Months Days (yyyyymmdd)

Parameter : AHMSAA01 (TIME)
Description : Time in format hh24miss
Method : Computation
Units : Hours Minutes Seconds

Parameter : CAPHZZ01 (MET)
Description : Atmospheric pressure (unspecified)
Method : Unspecified method
Units : Millibars

Parameter : CDTASS01 (MET)
Description : Dry bulb temperature (in-situ)
Method : In-situ thermometer or psychrometer
Units : Degrees Centigrade

Parameter : CRELSS01 (MET)
Description : In-situ relative humidity
Method : In-situ humidity sensor
Units : Per Cent

Parameter : CSLRR101 (MET)
Description : Solar radiation
Method : 300-2500 nm incoming solar radiation sensor
Units : Watts/square metre

Parameter : EGTSSS01 (WIND)
Description : Gust wind speed
Method : In-situ anemometer
Units : metres/sec

Parameter : EWDASS01 (WIND)
Description : Wind direction
Method : In-situ anemometer
Units : Degrees True

PARAMETERS (continued)

Parameter : EWSBSS01 (WIND)
Description : Wind speed
Method : In-situ anemometer
Units : metres/sec

Parameter : GTDHZZ01 (WAVE)
Description : Significant wave height (unspecified)
Method : Unspecified method
Units : Metres

Parameter : GTZAZZ01 (WAVE)
Description : Zero crossing period (unspecified)
Method : Unspecified method
Units : Seconds

Parameter : HEADCM01 (NAV)
Description : Platform Heading (Orientation)
Method : measured by compass
Units : Degrees True

Parameter : NRADR101 (MET)
Description : Nett radiation (incoming minus outgoing)
Method : 300-6000 nm nett radiation sensor
Units : Watts/square metre

Parameter : TEMPPR01 (HYDR)
Description : Sea temperature (unspecified)
Method : Unspecified temperature probe
Units : Degrees Centigrade