

## STABLE data series at the southern North Sea site

### Principal Investigator

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### Data Originator

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The STABLE II lander was deployed at the main PROVCESS mooring site A (Rig A) in the southern North Sea (SNS) during cruise Pelagia PE136 and recovered at the end of the SNS experiment. STABLE was fitted with a range of sensors and two data loggers. The main data logger stored a cycle of averaged data once a minute from rotor current meters, a pressure sensor and a temperature sensor. These data are part of the Conventional Time-series Data Set and are documented here. The second data logger operated in burst mode, collecting approximately 9600 scans at a frequency of 8 Hz once an hour from electromagnetic current meters, a pressure sensor and an STD-12 Plus Conductivity/Temperature sensor. These data are part of the Burst Recorded Data Set and have been documented in the document '[moorings.pdf](#)'.

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
541871	LA	52 18.4 N	004 18.0 E	1999/03/30	20.0	17.7

where Data Type LA = Currents -subsurface Eulerian

Parameter	Unit	Parameter code	Comments
Platform heading	deg. T	HEADCM01	none
Current direction	deg. T	LCDAEL01	none
Speed (Rotor 1)	cm/sec	LCSAEL01	caution (see text)
Speed (Rotor 2)	cm/sec	LCSAEL02	caution (see text)
Speed (Rotor 3)	cm/sec	LCSAEL03	none
Speed (Rotor 4)	cm/sec	LCSAEL04	none
Pressure	db	PRES01	none
Temperature	deg. C	TEMP01	none
Pitch angle	degrees	PTCHEI01	none
Roll angle	degrees	ROLLEI01	none

**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

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INFORMATION FOR BODC SERIES REF. NO. 541871

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Moored Current Meter Inventory Number : 10500

Start Time : 30 Mar 1999 1148 GMT  
End Time : 19 May 1999 0745 GMT

Latitude : 52deg 18.4min N  
Longitude : 004deg 18.0min E

Nominal Cycle Interval : 60.0 secs

Minimum Depth : 17.70m  
Maximum Depth : 18.50m  
Sea Floor Depth : 20.00m

Positional Uncertainty : 0.1 to 0.5 n.miles  
Sea Floor Datum : Instantaneous  
Sensor Depth Datum : Sea floor reference  
Disposition of Sensors : Scattered at fixed depths

Project : Provess

Data Category : Currents -subsurface Eulerian  
Instrument Type : Savonius rotor current meter  
Instrument Mounting : Sea floor - fixed  
Originator Laboratory : Proudman Oceanographic Lab., Bidston, UK  
Originator's Identifier : stable/pe136 (Site A, Rig A)

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The following **caution** applies to this series:

Records from the pitch and roll sensors indicated that STABLE moved on 13/4/99 between 06:00 and 09:00. Meteorological data for this period indicated that the move occurred during a period of strong winds (speeds above 25 knots) suggesting that STABLE might have been hit by rough seas and rocked (records from the transmissometer fixed on STABLE also showed a major decrease in light transmission at that time probably due to sediment resuspension). Following this event, current speed recorded by Rotor 1 (closest to the sea floor) was consistently lower than that measured by the three other rotors suggesting that the rotor might have been damaged or become obstructed during the event. Rotor 2 also recorded lower values than Rotors 3 and 4 immediately after the move but appeared to recover after 21/4/99 19:00. Since these suspect records from Rotors 1 and 2 appear to be correct in terms of relative changes in current speed, the data were not flagged. However users are advised to use their absolute values with caution.

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Additional information stored with the data:

A number of short-lived irregularities was observed in the current speed records of all four rotor current meters. These were characterised by sudden major decreases in current speeds down to very low or null values followed by a progressive recovery. These irregularities which were flagged as suspect values might have been caused either by shading from one of the legs of the lander or by debris being caught in the rotors and hindering their good functioning.

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The following processing steps were carried out at BODC:

- conversion of current direction from degree relative to magnetic North to degree True by correcting for (adding) the local magnetic deviation of 2.2 degrees.
  - conversion of current speed from m/s to cm/s.
  - conversion of pressure from bars to dbars.
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## **INFORMATION FOR BODC SERIES REF. NO. 541871 (continued)**

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The following additional documents apply to this series:

[68616](#); Sediment Transport and Boundary Layer Equipment Mark II (STABLE2)

[63428](#); General Data Screening carried out by BODC

Data Activity Document: [78072](#)

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).

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

Parameter : LCDAEL01 (CURR)  
Description : Current direction (Eulerian method)  
Method : In-situ current measurement  
Units : Degrees True

Parameter : LCSAEL01 (CURR)  
Description : Current speed (Eulerian method)  
Method : In-situ current measurement  
Units : cms/sec

Parameter : LCSAEL02 (CURR)  
Description : Current speed (Eulerian method) (Channel 2)  
Method : In-situ current measurement  
Units : cms/sec

Parameter : LCSAEL03 (CURR)  
Description : Current speed (Eulerian method) (Channel 3)  
Method : In-situ current measurement  
Units : cms/sec

Parameter : LCSAEL04 (CURR)  
Description : Current speed (Eulerian method) (Channel 4)  
Method : In-situ current measurement  
Units : cms/sec

Parameter : PRES01 (HYDR)  
Description : Sea pressure (fixed)  
Method : Fixed pressure sensor (e.g. SFPG)  
Units : Decibars

Parameter : PTCHEI01 (NAV )  
Description : Pitch Angle  
Method : Electromechanical Inclinator  
Units : Degrees

**PARAMETERS (continued)**

Parameter : ROLLEI01 (NAV )  
Description : Roll Angle  
Method : Electromechanical Inclinator  
Units : Degrees

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