

SESAME ERS SAR DATA

SESAME (Shelf Edge Study Acoustic Measurement Experiment) was an experiment coincident in both space and time with SES undertaken by a collaboration involving the Defence Evaluation Research Agency (DERA, UK), Naval Research Laboratory (NRL, USA) and the French and Netherlands defence communities. Several types of oceanographic data were included in the **SESAME data set**. The project had two phases: SESAME1 in August 1995 and SESAME2 in August 1996.

As part of the experiment a number of SAR images of the Malin shelf-edge were acquired from ESA. The images show the area 56-57 N, 9.5-8.5 W, as labelled, and two versions are supplied, one with annotated bathymetry (200, 500 and 1000 m contours from GEBCO), and are as follows:

200895

This is an ERS-1 image taken at 11:36 UT on 20th August 1995. This image is very clear and shows many prominent internal wave signatures over the continental slope and the shelf. **200895b** is the same image with superimposed bathymetric contours.

210895

This is the tandem ERS-2 image of 200895, taken precisely 24 hours later, (11:36 UT on 21st August 1995). The image is less clear but similar internal wave signatures can just be discerned. **210895b** is the same image with superimposed bathymetric contours.

050995

This is a further ERS-1 image from 11:37 UT on 5th September 1995, indicating features on the slope and to the south of the image. **050995b** is the same image with superimposed bathymetric contours.

210896

This is an ERS-2 image take at 11:36 UT on 21st August 1996. It shows a number of interesting features in the vicinity of the shelf break, including a packet of solitons on the slope. A long internal wave front, parallel to the shelf edge (suggestive of an internal tide), can be seen together with a wide dark band ahead it (again suggestive of an internal tide). **210896b** is the same image with superimposed bathymetric contours.

The data are ©European Space Agency.

The SESAME Data Set

The SESAME data set consists of shipborne XBT, CTD, towed thermistor chain, underway ADCP and underway meteorology data accompanied by moored current meter and thermistor chain data. At one stage it was hoped to include the complete data set on this CD-ROM. However, due to publication deadline constraints it has only been possible to include a small subset of the data on the CD-ROM. However, the complete data set have been submitted to BODC for long-term archival in the UK National Oceanographic Database.

DERA have provided a sample of towed thermistor chain data in image form to illustrate the type of oceanographic features that may be identified with this type of data. of thermistor chain data The image, designated CT95, was collected between 00:00 and 02:00 on 19th August 1995 from RV Colonel Templer on a tow perpendicular to the shelf break.

This image clearly displays a packet of four soliton-type waves, the largest one having an amplitude of approximately 50 m. This wave has been related to the type of bore on the slope visible in the 200895b SAR image between the 500 and 1000 m contours at around 56.5 N.

More information may be obtained from the following references:

Small J., Hornby B., Prior M. and Scott J.. Solitons and SAR. Text may be found on Web URL <http://www.whoi.edu/science/AOPE/people/tduda/isww/text/small/jsmall.htm>

Small J., Sawyer T.C. and Scott J.C. 1998. The evolution of an internal bore at the Malin shelf break. *Annales Geophysicae*, in press.

Small J., Hallock Z., Pavey G. and Scott J., 1998. Observations of large amplitude internal waves at the Malin shelf-edge during SESAME 95. *Continental Shelf Research*, submitted.

Draft copies of any of these papers may be obtained from.

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