Geophysical Research Abstracts, Vol. 7, 06775, 2005
SRef-ID: 1607-7962/gra/EGU05-A-06775

Miniature Broadband System for Ocean Floor Seismology

A Anglade (1), Y Hello (1), B Yates (1), S Goddard (2), A Smith (2), M Rowe (2), **C Guralp** (2)

1. Géosciences Azur, (www-geoazur.unice.fr)
2. Guralp Systems Limited, (www.guralp.com)

Géosciences Azur and Guralp Systems have developed a low-power, true broadband ocean bottom seismometer (OBS) system with sensors housed within a glass sphere only 150 mm in diameter. This new system allows broadband instruments to be deployed in situations where geophone-based systems would previously have been the only option.

The system can be installed by two persons from a small boat. It does not require specialised equipment for deployment, reducing costs, and includes a reliable acoustic release mechanism for recovery.

The broadband sensors provide a stable and realisable transfer function, with lower noise, higher linearity, and substantially higher cross-axis rejection in comparison to geophone equipment. A novel +/- 90 degree gimbal ensures a stable platform for the broadband sensors. Ocean bottom current effects are minimized through efficient coupling to the sea floor.

During a cruise scheduled from March to June 2005 on the active margin of Ecuador and Colombia a 25 OBSs network (consisting of 15 broadband OBSs of this type and 10 short period OBSs) will be deployed for passive and active recording and provide the first dataset at sea to allow comparison with previous short period OBS.