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## 国产海底地震仪研制现状及其在海底结构探测中的应用

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Progress of homemade OBS and its application on ocean bottom structure survey

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摘要

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**摘要** 海底地震仪(Ocean Bottom Seismographs, OBS)及由其组成的海底流动地震观测台阵是近年来发展起来的高新技术,在油气探测、科学研究、防灾减灾等方面有广泛的用途,是地球物理仪器与探测技术发展中的一个新增长点.本文介绍了由中国科学院地质与地球物理研究所研制成功的宽频带、7通道海底地震仪((I-7C)OBS)的性能、指标以及关键技术的实现.同时,介绍了(I-7C)OBS近年来在渤海、南海以及西南印度洋的5次海上试验与应用的结果.5次应用试验中均有国外同类型的一起参加,(I-7C)OBS在性能指标、回收率和数据质量等方面都有较好的表现.2010年以来,国产OBS在我国各海区经过上百台次的海上作业(超过半数工作水深在2000 m以上),仅丢失一台.仪器回收率超过98%,数据完整率超过95%.一些航次的首席科学家认为我国国产OBS已经达到国际先进水平.

**关键词:** 国产海底地震仪 海陆联合地震探测 海底地质结构

**Abstract:** Ocean Bottom Seismographs (OBS) and the seabed mobile seismic observation array composed by them was recently developed high-tech. It's a new growth point in the geophysical instruments and exploration technology, and it has a wide range of uses, such as in oil and gas exploration, scientific research, disaster prevention and mitigation and so on. The performance, technical data, and key techniques of the I-7C Ocean Bottom Seismograph (OBS) is introduced in this paper. The wideband 7-channel OBS is designed and produced by Institute of Geology and Geophysics, Chinese Academy of Sciences. In recent years we have conducted five marine tests in the Bohai Sea, South China Sea, and southwestern Indian Ocean. OBS instruments made in western countries were also used in the five tests. The results indicate the good performance of the (I-7C) OBS in technical data, recovery operation ratio, and data quality. Since 2010, homemade OBS were tested over one hundred times in different seas, more than half worked in over 2000 meters water depth, only one was lost, and the recovery operation ratio was over 98%, data integrity ratio was over 95%. Some chief scientists believe that the domestic OBS have already reached advanced world levels.

**Keywords:** Homemade OBS Land-marine joint seismic survey Geological structure of ocean bottom

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