Preface

While earthquakes have been known throughout human history, microseisms were discovered little more than a hundred years ago. A historical sketch of the development since then was presented in Vancouver, August 1987 by P. Bernard at the IASPEI Symposium entitled "Microseisms Caused by Factors Internal and External to the Earth's Crust". Fourteen papers were presented and it was agreed that a special issue of *Physics of the Earth and Planetary Interiors* should contain papers from the meeting together with other papers on the subject. The present special edition contains seven papers from the symposium and nine additional papers.

Two of the authors present their opposing views on high-frequency microseisms related to slow changes in the stress field, both of them derived from investigations in U.S.S.R. during the last decade.

Noise produced by a high-frequency monochromatic vibrator is used to analyse non-linear evolution and interaction in wave propagation in near-surface layers.

Seven papers contain discussions on the generation of primary and secondary microseisms near coastlines. The important role of coast steepness is discussed; in areas with a flat profile primary microseisms are expected and at steep coasts secondary microseisms are recorded. Bottom friction is suggested as a source for the horizontal motion. The Falkland continental shelf is suggested as the source of the 26-s period microseisms, and the shelf zone off the steep northern coast of Norway for microseisms in the period range 14–20 s.

Generalized spectra of ocean bottom seismic noise are given as a comprehensive method of presenting old data and as reference curves for comparison with new data. It is a reference for ocean bottom noise in a similar way as the Brune and Oliver/Fix is a reference for seismic noise on land.

The statistical properties and wave types of seismic noise over a wide range of frequency, time and space are analyzed in four papers using array data. Specific noise sources are detected, and the benefits of recording high-frequency seismic energy are shown.

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