

REVIEWS

Monitoring the Comprehensive Nuclear-Test-Ban Treaty: Surface Waves, edited by Anatoli L. Levshin and Michael H. Ritzwoller. Birkhäuser Verlag Basel-Boston-Berlin, 2001, Reprint from Pure and Applied Geophysics (PAGEOPH), Volume 158 (2001), No. 8, 1339-1582 (244 pages).

This volume appears as the fourth of a series of reprints of eight special issues of PAGEOPH on seismological and acoustic observations and research relevant to monitoring compliance with the Comprehensive Nuclear-Test-Ban Treaty (CTBT). Its conception appreciably differs from that of the volumes issued up to now (for reviews of those on Source Location and Hydroacoustics see Nos. 3/2001 and 4/2001 of *Studia geoph. et geod.*).

In their comprehensive introduction with over fifty references, the two editors offer the reader a well-arranged summary of the methods and results of surface-wave identification, measurement of the group- and phase-velocity of Rayleigh and Love waves, estimation of dispersion maps on global and regional scales, and of surface-wave tomography in general. The variety of CTBT applications of this research is mentioned and discussed implicitly within the introduction and in the following ten papers, six of which report primarily on the methods and recent results of surface-wave tomography, and four on the art of surface-wave identification, measurement and source characterization. Two of the papers present recent results of works aimed at improving and focusing regional models of the earth's lithosphere by inversion of broad-band regional surface-wave dispersion maps. Immediately CTBT-related topics dealt with in the papers include the detection and extraction of surface waves of weak events from noisy recordings by means of phase-matched filters, automatic estimation of M_S magnitudes as part of the $m_b : M_S$ discriminant which is widely employed to distinguish nuclear explosions from other seismic sources, and determination of focal depth and mechanism (both isotropic and nonisotropic components) by simultaneous consideration of body-wave polarization and surface-wave amplitudes.

At the end of their introduction the editors state that the volume cuts across essentially all the major applications of surface waves to monitoring the CTBT and that they believe that it will provide a reasonable introduction to the state of research in this area. I would only add that in its entirety, that means together with the editors' excellent introduction and the list of carefully selected relevant references, this volume may well serve as a guide for further exploration not only in this area, but in the whole field of surface-wave observation, theory and interpretation.

Axel Plešinger
Prague, Czech Republic