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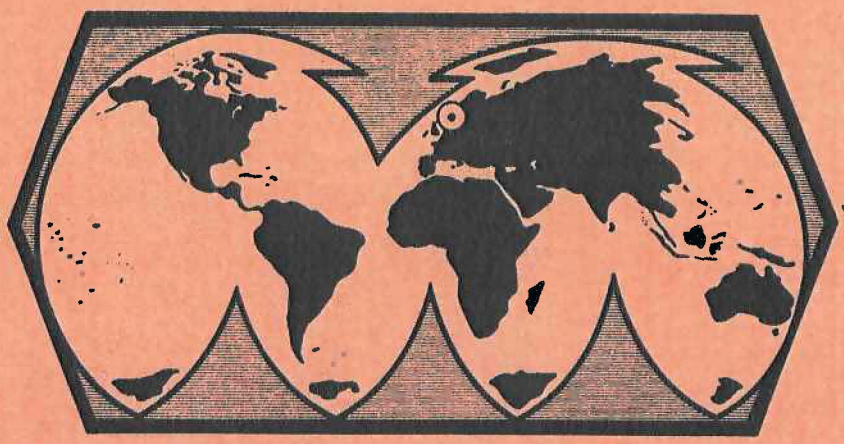

VI.6 Lg, Li and Sn Propagation Characteristics Across Eurasia

WWSSN SP and LP records from some 40 earthquakes and presumed nuclear explosions in Western Russia and Central Asia have been examined thoroughly. The corresponding data base, travel times and amplitudes/periods for all prominent phases comprises readings from some 15 stations in the distance range 5^{o} to 35^{o}. Preliminary results are as follows: distinct and prominent Lg, Li and Sn arrivals are seldom observed beyond 15^{o}. In the distance range 5^{o}-15^{o} first P arrivals are generally stronger than Lg type of waves. A notable exception here is a presumed explosion in the Kola peninsula while propagation across the Ural mountains is less efficient though better than for propagation paths across the Himalayas. The phase velocities of the Lg, Li and Sn phases are relatively stabel; typical values being 3.50 km s^{-1}, 3.80 km s^{-1} and 4.50 km s^{-1} (see Fig. VI.6.1). Notwithstanding the fact that the amplitude observations exhibit considerable scattering, making it difficult to assess the discrimination potential of these phases, amplitude decay curves as a function of epicentral distance have been constructed. One example of such a curve is given in Fig. VI.6.2. Also, these decay curves are 'matched' to those of P-waves, enabling us to estimate m_b-detection thresholds for these phases as well. To provide a better understanding of Lg-propagation characteristics, structural investigations based on ISC-reported time residuals will also be attempted.

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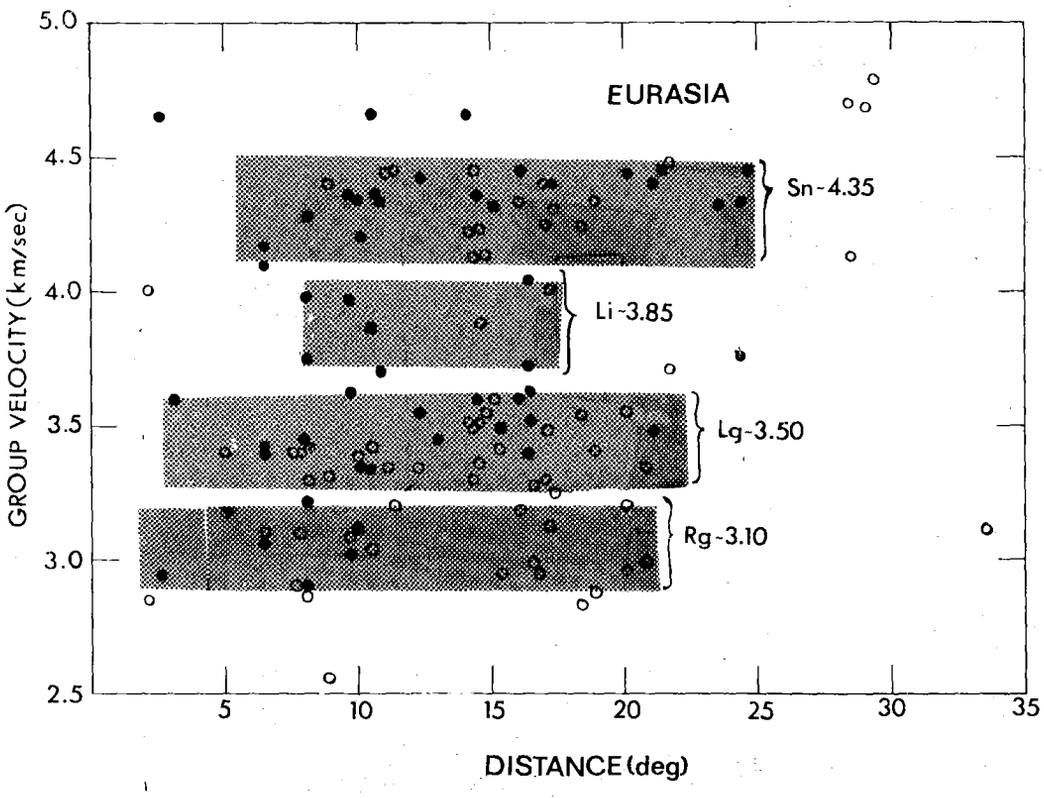

Fig. VI.6.1 Observed phase velocities for the phases Sn, Li, Lg and Rg.

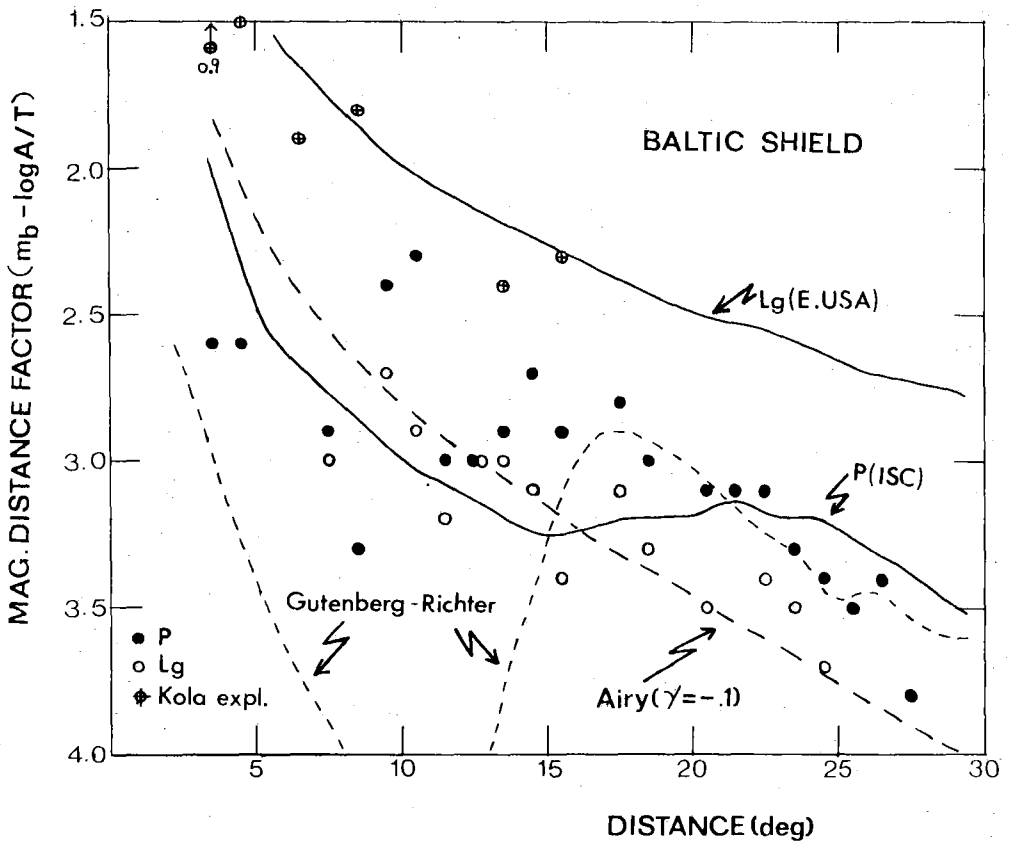

Fig. VI.6.2 Amplitude decay curves for P and Lg phases from explosions observed on Finnish stations.