

RAY PARAMETERS OF SHEAR WAVES RECORDED AT LASA

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## DIGEST

The S wave ray parameter,  $dT/d\Delta$ , was determined using the Large Aperture Seismic Array in Montana. Long-period S waves from 44 earthquakes in the distance range of  $14^{\circ}$  to  $83^{\circ}$  were used. Horizontal component seismograms were used and resolved into SH and SV components. From these, onset times of S and relative travel times of the first peak and trough of the S motion across the array were determined. As a rule, the SH-determined values of  $dT/d\Delta$  were found to be more consistent.

Earthquakes originating in the Galapagos Islands showed obvious phase differences between the N-S and E-W components. For these earthquakes the values of  $dT/d\Delta$  were determined by comparison of the N-S and E-W components separately. The values of  $dT/d\Delta$  obtained from the E-W component were found to be anomalously large, although they were expected to be more reliable because they correspond approximately to SH motion.

Standard deviations and weighted standard deviations were calculated in which the weighting factor was proportional to the distance between the station pair used to obtain  $dT/d\Delta$ . Azimuthal effects on the observed

value of  $dT/d\Delta$  were found to be negligible compared with the other errors involved, such as in reading arrival times.

The resultant values of  $dT/d\Delta$  were compared with those of Fairborn (1969), who also studied S waves across LASA to determine the slope of the travel-time curve. When  $dT/d\Delta$  was plotted as a function of epicentral distance, the curve was found to be consistent with that of Fairborn except in the range of about  $75^\circ$  to  $80^\circ$ , where the values of this present study are larger. This implies smaller velocities than given in his model at depths of about 2100 to 2300 km.