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of Earthquake Depth Indicators from Hydroacoustic Analysis of T-Phases

Depth assessment is one of the most difficult, however, most effective event screening methods and is usually achieved by the International Monitoring System using seismic sensors. Analysis of waveforms recorded at hydrophones from a small set of events with similar mechanisms and relatively high SNR, located in Central Sumatra, indicated promising depth sensitivity and dependency of T-phase signal properties. Specifically, the T-phase time residuals, the rise time, the dominant period, duration, time-dependent spectral content and the envelope width showed systematic depth dependency. We assess the operational value of these findings through investigations of the above-mentioned parameters at other locations, while considering station-event configurations, event mechanism and event signal-to-noise ratios.

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