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Spot check of seismic and infrasound data and products at the IDC using waveform cross correlation and the REB historical events

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The Reviewed Event Bulletin (REB) of the IDC is the final product of interactive analysis, but also represents a set of seismic (S), infrasound (I), and SI events, which can be used for the analysis of the REB consistency. Continuous comparison of the event hypotheses obtained in routine automatic and interactive analysis with these historical events also helps to improve the REB completeness. More than 600,000 REB events have been converted into master events (MEs) with waveform templates at IMS seismic and infrasound stations. We use the method of waveform cross-correlation (WCC) to assess the similarity between event hypotheses and the MEs at a station-by-station basis. For the hypotheses built in automatic processing (SEL1 to SEL3), only the MEs within 8 degrees from a given event hypothesis are used. For checking the REB, the best MEs within 4 degrees are used. In addition to checking the IDC bulletins, we process continuous SI data for missed events using a global set of ME selected as the most efficient in WCC detection of the historic REB events. All events obtained in the WCC processing are subject to the same spot check procedure as the SEL3 events.

Promotional text

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