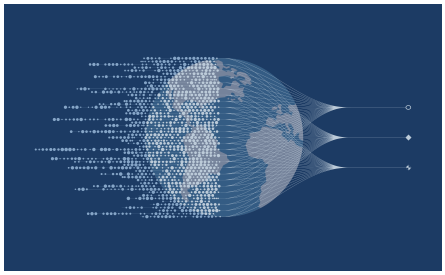

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Evaluating the Contribution of Scanning Processes to the International Data Centre Seismic Event Bulletins

Thursday 11 September 2025 12:00 (1 hour)

The accuracy and completeness of the International Data Centre (IDC) seismic bulletins, such as the Late Event Bulletin (LEB) and Reviewed Event Bulletin (REB), are essential for global seismic monitoring of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO). This study assesses the contribution of scanning processes for missed events during the interactive analysis and their integration into the LEB and REB. The geographic distribution, size, and depth of scanned events are analyzed. Additionally, the contributions of individual stations to the detected events through scanning are examined, identifying stations with a high number of detections as well as those with fewer detections. The findings demonstrate that scanning significantly enhances the LEB and REB by identifying overlooked events, improving bulletin completeness. However, this study will explore and recommend possible improvements to enhance the SEL3 automatic production process. Reducing the number of missed events during automatic processing can minimize reliance on scanning, leading to a reduced workload for analysts while maintaining high bulletin quality. This assessment underscores the critical role of scanning in ensuring comprehensive seismic monitoring. It offers actionable insights for optimizing the balance between automated and scanning processes to improve efficiency and accuracy in seismic data analysis.

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