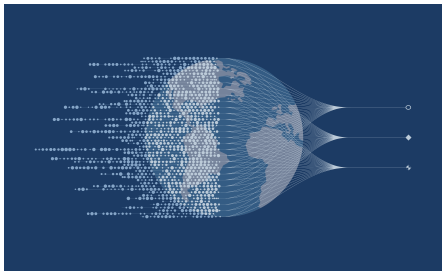

ID: **P3.5-269** Type: **E-poster**

of the impact of interactive analysis on Primary Array Seismic stations detections associated with building the automatically produced SEL3 events

The ability of automatic data processing at the CTBTO results in identifying and estimating parameters for phases detected by the IMS stations. These processes contribute to provide automatic event locations generating the Standard Event List3(SEL3). During interactive analysis, the SEL3 event solutions are refined by modifying, or re-estimating phase attributes. These actions include: (1) adding new phases, (2) disassociating phases, (3) renaming phases, (4) re-timing phases, and (5) re-estimating phase parameters for azimuth and slowness.

Here, we evaluate the outcomes of these interactive actions, and the statistics of phase modifications performed during 2023 and 2024. We found the following numbers(percentages) of phases were modified in 2023: 73,937(20.7%) by adding, 30,603(14.2%) by disassociating, 117,034(32.8%) by renaming, 115,695(41.8%) by re-timing and 79,835(28.8%) by re-estimating phase parameters. These modifications led to the rejection of several SEL3 events, due to invalid detections or recorded by fewer than three seismic stations. The remaining SEL3 events, improved in quality, were validated and saved as LEB/REB bulletin.

Our analysis shows that a substantial number of phases associated with SEL3 events require modification, underscoring the need to enhance automatic data processing. Improving these processes would reduce the interactive analysis workload and ensure the timely production of the REB.

E-mail

fkalamneh@gmail.com

Primary author: ALAMNEH, Fekadu Kebede (Addis Ababa University)

Co-authors: Mr QORBANI CHEGENI, Ehsan (CTBTO Preparatory Commission); Mr RAMBOLAMANANA, Gerard (CTBTO Preparatory Commission); Mr GRAHAM, Gerhard (CTBTO Preparatory Commission)

Presenter: ALAMNEH, Fekadu Kebede (Addis Ababa University)

Session Classification: P3.5 Analysis of Seismic, Hydroacoustic and Infrasound Monitoring Data

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.5 Analysis of Seismic, Hydroacoustic and Infrasound Monitoring Data