

Relocation of seismic events in South Africa for ground truth identification and classification.

In an effort to improve the velocity models used in the calculation of travel time corrections for regional phases, well-located earthquakes are being relocated and classified as ground truth (GT). The events were prepared by first reassessing their source parameters using available collected phase data. The first step in identifying possible GT events was to preselect events that were going to be further analysed to see if they satisfy the GT595% criteria. A set of eight events recorded by more than five stations located within a distance of 150 km of the event epicentre were relocated using the ISC location algorithm, iLOC, and a 3D global velocity model made compliant with the Regional Seismic Travel Times parameterization. Solutions of two of the eight preselected events were found to satisfy the conditions for GT595% candidacy whilst four events satisfied the criteria for GT2090% candidacy. The P wave path coverage for the two identified GT595% events shows that both events were well recorded by 106 and 542 stations respectively, which were well distributed azimuthally. It is hoped that these GT595% events are going to be useful in the improvement of the RSTT models for our region.

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