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A GT5 Earthquake Identified in Central Brazil

Ground-truth (GT) events, accurately located with a precision of 5 km (GT5 event) and associated travel times to regional stations are important in developing precise velocity models. The low Brazilian seismicity, with only three continental earthquakes of magnitude five in the last three decades, and the low number of seismic stations explain the difficulty to detect events at regional distances. In the world maps of GT events, Brazil appears completely empty. In Stable Continental Interiors, like Brazil, it is difficult to find an event fulfilling all the GT5 prerequisites, particularly in respect with the number of picked phases and azimuthal gaps. Recently PTS-CTBTO has organized meeting and workshops to encourage seismologists from South and Central America to cooperate with the work of identifying GT5 events in these countries, with a goal of developing a 3-dimentional velocity model for this part of the globe not covered yet like Europe and North America. As a result we studied a recent magnitude 5 event in Central Brazil detected by few regional stations. Aftershock studies with local stations, showed a fault 5 km long. Joint relative locations of events recorded locally and regionally allowed the main shock to be a GT5 event.

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