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event location: Relocation of the 22nd June 2024 M 4.4 earthquake in Kenya using Local and Regional Networks

Accurate seismic event location is essential not only for the Comprehensive Nuclear-Test-Ban Treaty (CTBT) verification but also for national data centers in order to advise national governments. Following the 22nd June 2024 M. 4.4 earthquake locating in Kenya we improve the location of CTBTO at 2.228° S and 39.18444° E with Mb 4.1. The event is also reported by the USGS to be located at 2.2896° S, 39.1603° E. A total of 28 stations including 20 temporary local stations improved the location significantly using geotool and seisan software. The new focal location is 2.121° S and 37.857° E with a reverse fault focal mechanisms where the strike is 236° , dip 50° and rake 83° and a coda magnitude of 3.2. The new location falls close to known fault line and known seismic source area. This work demonstrates the critical role of combining local and regional data in improving event accuracy and verification capabilities, aligning with SnT2025's goals of fostering innovation, strengthening cooperation, and building resilient scientific networks for global security.

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