

Earthquake Detection Capabilities of PhaseNet and EQTransformer Using the 3 April 2017 Botswana M6.5 Earthquake and its Aftershocks.

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PhaseNet and EQTransformer are two deep learning methods most commonly used for automatic earthquake detection and phase-picking. This work presents the performance of these algorithms using two weeks of data retrieved from the Botswana Seismological Network stations. Additional data used is obtained from the International Monitoring System network within a distance of 250 km from Botswana (e.g. Lobatse and Boshof). The results of PhaseNet and EQTransformer are recorded and compared with the results of the STA-LTA method. The accuracy, precision, recall, and F1 score are calculated for each method. Preliminary results show that the deep learning algorithms outperform conventional phase-picking methods in noisy data and where events overlap. Events that may be ambiguous for traditional methods are often clear outliers within the DNN model domain, as observed in this study.

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Promotional text

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Oral preference format

in-person

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