

Machine-Learning Event Classification in North-East China using augmented data

Alemayehu L Jemberie (PhD)

United States of America Air Force Technical Applications Centre (AFTAC, ajemberie@aftac.gov)



..... INTRODUCTION AND MAIN RESULTS

A transfer learning approach was adopted, using a VGG16 neural network model to classify earthquakes from non-earthquake events in North-East China close to the North Korean test site.

- Deeper events (depth > 5 km, assumed to be Earthquakes) are identified at 83% accuracy.
- Shallow events (depth < 5km, assumed to be explosions) are fewer than deeper events in number and have low identification rate at 62%.
- Synthetics were generated for Shallow events only. Scattering effect needs to be included in the waveform synthesis. More explosion (shallow) data is needed for better training.

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