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Identification of P Wave from an Earthquake Using Locally Trained Neural Network

The algorithm put forward in this paper is designed for devices that provide ultrashort warning of earthquakes. It is based on the time difference between the arrivals of P and S waves. The difference is small, but rapid identification of a P wave arrival from a large earthquake is useful for mitigating the impact of such an earthquake, in particular, human losses. The method we propose is based on neural network recognition and can deal with the problem as stated above rather accurately and rapidly. Indeed, the training of a local network by local data (in contrast to the training using a "universal" sample) can significantly reduce the warning error. This study demonstrates the point by a Japanese example.

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