

OCGC Seminar

A National Earthquake Early Warning (EEW) System for Canada

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**Carleton University
Herzberg Laboratories
Room 3120**

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**Carleton University
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Natural Resources Canada (NRCan) is currently developing a national Earthquake Early Warning System (EEWS) for Canada. This EEWS has been designed to provide warnings to the public and to critical infrastructure in regions of moderate-to-high seismic risk, becoming operational in 2024. The network sensor locations are chosen to provide warnings for most large earthquakes in and near Canada. Designs for three types of stations, for use in different environments, have been developed with fast communications links to redundant data centres. Collaboration through software and data sharing with the United States Geological Survey's (USGS) ShakeAlert® provides confidence in the operational capabilities of the national EEWS for Canada and ensure consistent cross-border alerting. Seismic waveform data was collected from the Canadian National Seismograph Network (CNSN) and other available networks, and then grouped into one-second packets to simulate the data flow from the planned EEW network. Testing of the EEW algorithms using historical earthquakes indicates earthquake source parameter estimates can be performed with adequately for events in Canada. Current results from a system with real-time data from the CNSN and EEW network stations indicate the system is able to produce timely warnings from earthquakes that have occurred in the past year.



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