the 25th Anniversary of the 1999 Chi-Chi Earthquake

International Conference in Commemoration of the 25th Anniversary of the 1999 Chi-Chi Earthquake:
Past, Present and Future
September 13-14, 2024, Taipei, Taiwan

Current Status and Prospects of Earthquake Monitoring, Reporting, and Information Services in Taiwan

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Currently, there is no effective global method for predicting earthquakes. The best tool for managing earthquake threats is early warning. In Taiwan, the Central Weather Administration focuses on earthquake prevention and disaster reduction. We've improved early warning technology, reducing alert times from 22 seconds in 2002 to as little as 7 seconds today.

Key improvements involve using extensive earthquake data to train AI neural networks, which help distinguish real seismic waves from false ones. We also use IoT technology to collect real-time data from 594 seismic stations and employ edge computing for efficient data processing.

We recognize the need for collective efforts from industry, government, and academia to enhance earthquake warning systems. Cross-sector collaboration, automation, and public-private partnerships are crucial. We use social media for continuous public awareness, aiming to reduce earthquake impacts through the WAVES (Warning Against Violent Earth Shakes) initiative.

The current earthquake early warning AI model has been successful in tests. In the future, we will use diverse instrument data to train the model, aiming to issue warnings with just one station. By analyzing extensive historical earthquake data and considering regional site effects, we strive to achieve a 5-second warning. We will also develop new algorithms to improve adaptability to complex site conditions.

Looking ahead, we will focus on automation, diversification, universalization, and sustainability to create a safer, smarter living environment. Customized warning services, public education via social media, and nurturing young talent are key components of our strategy. We aim to serve Taiwan while collaborating globally to improve earthquake disaster management.