



Spotlight Editorial: Taiwan's Fight with Nature Disasters: The Battle that Must Win

Kuang-Chong Wu

Vice President, National Applied Research Laboratories, Taiwan

Professor, Institute of Applied Mechanics, National Taiwan University, Taiwan

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Corresponding author: wukc@webmail.iam.ntu.edu.tw

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Taiwan was gifted with a beautiful natural environment; however, it comes with a cost on this very unique geographical location. Natural disasters such as typhoons, torrential rains, debris flows, and earthquakes frequently cause severe damage and losses. The Taiwanese government and public are trying hard to prevent these disasters and protect its people by all means including scientific research, making laws and improving processing efficiency of corresponding official units. The National Applied Research Laboratories (NARL) is one of those lead roles among the battle between Taiwan and the Mother Nature. NARL has conducted studies on disaster prevention and responses, and applied electronic, modeling, and automation data analysis techniques to assist the government in disaster prevention and rescue. These techniques have positively influenced disaster reduction and preparedness, responses during disasters, and reconstructions after disasters.

The spotlight topic of AUSMT current issue features the topic "Information automation and disaster responses" and introduces the related works from 7 centers of NARL: **Taiwan Ocean Research Institute (TORI)**, **National Center for Research on Earthquake Engineering (NCREE)**, **National Center for High-Performance Computing (NCHC)**, **Taiwan Typhoon and Flood Research Institute (TTFRI)**, **Instrument Technology Research Center (ITRC)**, **National Science and Technology Center for Disaster Reduction (NCDR)**, and **National Space**

Organization (NSPO). In addition to the research results, we also interviewed **Dr. Kuo-Chun Chang**, the director of NCREE, to share his observations and vision regarding the field of disaster prevention technologies.

The spotlight in this issue collected the following seven articles: "The Development of Bridge Scouring Real-Time Monitoring and the Application of Mobile Location-Based Services in Disaster Prevention and Rescue," "Earthquake Early Warning Systems," "Rapid Flood Evaluation Systems in Taiwan Metropolitan Areas," "Application of Disaster Prevention and Rescue Information Service Platforms in Disaster Prevention and Response," "Multifunctional Inshore Survey Platform With Unmanned Surface Vehicles," "The Design and Verification of the VCDi Panchromatic Imager and Data Export Synchronous System of IMU," and "Application of Near Real-Time and Multiscale Three-Dimensional Earth Observation Platforms in Disaster Prevention."

These articles explore a wide range of topics and include aspects of land, sea, and air. Additionally, through publishing the results of studies on disaster prevention technology conducted by the NARL, NARL expects to facilitate research and development cooperation and resource integration among industries, governments, academia, and various research sectors.

Kuang-Chong Wu received his B.S. degree in civil engineering from National Taiwan University in 1979, M.S. degree in structural engineering from Lehigh University, U. S. A., in 1981 and Ph.D. degree in mechanics from Cornell University, U. S. A., in 1985. Dr. Wu returned to Taiwan in 1986 as an associate professor in the Institute of Applied Mechanics of National Taiwan University. He was promoted to full professor in 1991 and distinguished professor in 2006. He was the director of the Institute from 1994 to 1997 and the director of nano-electro-mechanical-systems research center in 2005. He has been the vice president of National Applied Research Laboratories since 2006.

