INSTITUTION OF GEOSPATIAL AND REMOTE SENSING MALAYSIA

Technical Forum Series 2022 / 1 on Postmortem of Recent Flood Incidents: Focus on the Role of Geospatial & Remote Sensing in Disaster Preparedness and Prevention

22 March 2022 (Tuesday), 9.00 - 11.00 am

Online at:
https://us02web.zoom.us/j/84718791348?pwd=M0hLdjFoWm
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Organisers

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SCIENCE & TECHNOLOGY RESEARCH
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Predictability of Extreme Rainfall Events During the Northeast Monsoon Season: A Recent Case During 16 - 18 December 2021

Muhammad Firdaus Ammar bin Abdullah

Subject Matter Expert (Numerical Weather Prediction), Malaysian Meteorological Department

Geospatial Support for Mapping of Disaster Incidents

Sr. Yeap Wei Chien

Assistant Director of Survey, Geospatial Information Management Section, Defence Geospatial Division (BGSP), Department of Survey and Mapping Malaysia (JUPEM)

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Abstract

The northeast monsoon over Malaysia usually begins in November and ends in March. November typically signifies the beginning of the wet season in Malaysia, mainly over the east coast states especially Kelantan and Terengganu. The northeast coast states generally receive three to five heavy rainfall episodes from November to December, while the east coast of Pahang and Johor begin to receive more rainfall towards mid-December to early January, and Sabah and Sarawak begin to receive heavy rainfall in January and February, whereas the rest of the country becomes relatively drier. However, during the recent northeast monsoon of 2021 / 2022, the pattern had some variability whereby, Selangor and Kuala Lumpur received an abundance of rainfall due to the passage of Tropical Cyclone Rai into the South China Sea. The passage of the tropical cyclone spawned transient disturbances in the South China Sea, which made its way into Peninsula Malaysia. The predictability of this event and the underlying physical processes responsible for these heavy rain episodes were evaluated using the operational numerical weather prediction (NWP) model at the Malaysian Meteorological Department. The predictability of extreme weather events due to climate variability and climate change is being closely monitored. The understanding of these extreme events is crucial in quantifying the uncertainties associated with weather forecasting. The model output is overlaid using a geographic information system (GIS) application at resolution of 1 km for Malaysia and 333 m for Kuala Lumpur. The need for geospatial modelling coupled with a dynamical weather prediction model is crucial as a part of the decision support system.

Biography

Mr. Muhammad Firdaus Ammar Bin Abdullah is a Subject Matter Expert (Numerical Weather Prediction) at the Malaysian Meteorological Department. He has significant experience in meteorological research & development, including in monsoon research (2000-2004), as an operational weather forecaster at the Butterworth RMAF Base (2005-2006), as well as over fifteen years of experience in the development and operations of numerical weather prediction (NWP) models (2007 - present).

Geospatial Support for Mapping of Disaster Incidents

Sr. Yeap Wei Chien

Assistant Director of Survey, Geospatial Information Management Section, Defence Geospatial Division (BGSP), Department of Survey and Mapping Malaysia (JUPEM)

Abstract

It is very crucial to have up-to-date spatial information in any disaster event. This information is needed for search and rescue (SAR) operations as well as support and relief management by respective agencies. Department of Survey and Mapping Malaysia (JUPEM) has developed a web map application, JUPEM Crowdsource, where users can report disaster incidents by sharing its location, photos and comments. A web map will then show all the incidents shared, which in turn helps relevant agencies in their SAR or relief operation. JUPEM has has also produced ten standard operating procedures (SOP) for geospatial information delivery on disasters. These SOPs will ensure final deliverables in the form of printed and web maps depicting the events before, during and after any disaster incident of disaster as required by the relevant agencies. JUPEM Crowdsource and deliverables from the SOPs have been presented to the National Disaster Management Agency (NADMA) in January 2022. Discussions are ongoing for NADMA to adopt and adapt the crowdsource application for nationwide usage in mapping and managing disasters.

Biography

Sr. Yeap Wei Chien received the bachelor degree in engineering (geomatics) and master degree in science (geomatic engineering) from Universiti Teknologi Malaysia in 2003 and 2010 respectively. He served as Assistant Program Director of Survey in the Geodetic Section, Survey and Mapping Division, National Institute of Land and Survey (INSTUN) from 2005 to 2014. He has been with the Department of Survey and Mapping Malaysia (JUPEM) since 2014, serving as Assistant Director of Survey in the Services and Coordinating Section, Geodetic Survey Division (2014-2016) and Assistant Director of Survey, Geospatial Information Management Section, Defence Geospatial Division (BGSP) (2016 - present). He has been recognised as a Subject Matter Expert (SME) in Geodesy (Coordinate System) since 2019. He has also received a number of awards, including Excellent Service Award in 2011 and 2017, as well as INSTUN Innovation Day 2012 Best Instructor Recognition Award in 2012.