[EE] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-TT Technology & Techniques

[M-TT35]HIGH-DEFINITION TOPOGRAPHY AND GEOPHYSICAL DATA ANALYSIS

convener:Yuichi S. Hayakawa(Center for Spatial Information Science, The University of Tokyo), Christopher A Gomez (Kobe University Faculty of Maritime Sciences Volcanic Risk at Sea Research Group), Shigekazu Kusumoto(富山大学大学院理工学研究部(理学))

Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

High-definition, or high-resolution data of earth surface topography and geophysical properties have become widely available for better understandings of the earth surface processes and dynamics. Here in this session, we accept discussions on high-definition topographic and geophysical data, including its theory, acquisition, archiving, processing, modeling and analysis. The approaches may include applications of, but not limited to, laser scanning, SfM-MVS photogrammetry, GNSS positioning, SAR interferometry, multi-beam sonar, geomagnetics and electromagnetics sensors based on terrestrial (fixed or mobile) and aerial (UAV or manned airborne) platforms.

[MTT35-P01]Spatial distribution of landslides in Sensuikyo Area in the Aso region induced by the 2016 Kumamoto Earthquake

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Keywords:the 2016 Kumamoto earthquake, Unmanned Aerial Vehicle (drone), Terrestrial Laser Scanning (TLS), Landslides, High-Definition topography

The 2016 Kumamoto earthquake triggered many landslides on steep slopes in the Sensuikyo area near Aso Volcano in Kumamoto, western Japan. We conducted field surveys on terrain shape information by Terrestrial Laser Scanning (TLS) and Unmanned Aerial Vehicle in order to discuss the effect of the earthquake. We analyze dense point cloud data of TLS in terms of the elevation change and topographic profile shapes. The maximum depth of the earthquake-derived landslides is about 6 m, which is deeper than the past landslides induced by heavy rainfalls. We also found that the longitudinal profiles of earthquake triggered landslides show different shapes from those of rainfall triggered landslides: The former are more curved, whereas the latter are straighter. This suggest that the landslides driven by the earthquake have occurred along a slip surface deeper than that of the rainfall-derived landslides. In this presentation, we discuss the detailed spatial distribution of landslides using a UAV-derived digital surface model and it derivative such as slope.