[H-TT33_2AM1] New horizons brought by UAV remote sensing
Convener:*Akihiko Kondoh(Center for Environmental Remote Sensing, Chiba University), Hitoshi Hasegawa(Dep.Geo. Geography Kokushikan Univ.), Yuji Kuwahara(Department of Urban and Civil engineering, school of Engineering, Ibaraki University), Hiroshi Inoue(National Research Institute for Earth Science and Disaster Prevention), Chair:Hiroshi Inoue(National Research Institute for Earth Science and Disaster Prevention), Hitoshi Hasegawa(Dep.Geo. Geography Kokushikan Univ.)
Fri. May 2, 2014 9:00 AM - 10:45 AM 211 (2F)
Satellite remote sensing always has limitations in timing and area of acquired images. Recent improvement in UAV(Unmanned Areal vehicle) will bring new scope in ‘anytime’, ‘anywhere’, and ‘easy’ remote sensing. We invite recent case studies using UAV remote sensing, and discuss for application from this time on.

9:00 AM - 9:15 AM
[HTT33-P01_PG] Mapping active faults by using small unmanned aerial vehicle and structure from motion: a case study on Midori fault
3-min talk in an oral session
*Shoichiro UCHIYAMA^1, Takashi NAKATA^2, Hiroshi INOUE^1, Yasuhiro KUMAHARA^2, Satoru SUGITA^3, Hideaki GOTO^2, Jun IZUTSU^3, Hiromichi FUKUI^3, Hinako SUZUKI^3, Kaoru TANIGUCHI^4 (1.National Research Institute for Earth Science and Disaster Prevention, 2.Hiroshima University, 3.Chubu University, 4.National Institute of Advanced Industrial Science and Technology)
Keywords: structure from motion (SFM), small unmanned aerial vehicle (sUAV), digital surface model (DSM), orthophoto, geomorphometry, midori fault scarp

We photographed the geomorphometry of the Midori fault scarp formed by the 1891 Nobi earthquake in Motosu city, Gifu Prefecture (Japan) by using a multirotor radio control helicopter as a small unmanned aerial vehicle (sUAV), and we analysed these images. A digital surface model (DSM) of 0.09 m mesh and an orthophoto with a resolution of 0.03 m were generated from these images by PhotoScan software produced by structure from motion (SFM). A topographic map with 1 m interval contours and a cross-section profile were processed using a DSM produced by ArcGIS. We expect that the new technology will be applied to tectonic landform survey and geomorphology research. In addition, our results should help to ensure flight safety and compliance with the law.