Oral | Symbol H (Human Geosciences) | H-SC Social Earth Sciences & Civil/Urban System Sciences

[H-SC25_30AM1]Human environment and disaster risk

Convener:*Tatsuto Aoki(School of Regional Development Studies, Kanazawa University), Yasuhiro Suzuki(Nagoya University), Mamoru Koarai(Geographic Information Analysis Research Division, Geography and Crustal Dynamics Research Center, Geographical Survey Institute), Toshihiko Sugai(Department of Natural Environmental Studies, Institute of Environmental Studies, Graduate School of Frontier Science, The University of Tokyo), Hiroshi Une(Geospacial Information Authority of Japan), Yoichi Nakamura(Department of Earth Sciences, Utsunomiya University), Jun Matsumoto(Deaprtment of Geography, Tokyo Metropolitan University), Shintaro Goto(Department of Environmental Systems Faculty of GEO-Environmental Science Rissho University), Keitarou Hara(Faculty of Informatics, Tokyo University of Information Sciences), Chair:Tatsuto Aoki(School of Regional Development Studies, Kanazawa University)

Wed. Apr 30, 2014 9:00 AM - 10:45 AM 421 (4F)

This session discusses disaster risks being inherent in the natural and human environment, which sometimes happen to appear at a disaster, from the viewpoint of not only natural sciences but also social and human sciences. Examples of discussion subjects are as follows: uncertainty of forecasting disaster and problems of huge disaster with low frequency that raised from the 2011 Tohoku earthquake, the methodology for improving hazard maps, national recovery plans considering probable changes or sustainability of the society, international cooperation for disaster mitigation, problems of active faults or liquefaction, adjusting disaster mitigation plan to the regional characteristics, technical development for supporting disaster prevention, education for the disaster mitigation.

10:15 AM - 10:30 AM

[HSC25-P03_PG]A new methodology to assess the impacts of precipitation change on flood risk in Tokyo 23 ward Area

3-min talk in an oral session

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Keywords:Flood risk, Precipitation change, Risk curve, Tokyo metropolitan area

n this study, we attempted to develop a new methodology for flood risk assessment in the Tokyo metropolitan area by considering the effect of precipitation change. By comparing the statistical distribution of the daily precipitation frequency for the whole study period, and those for flood occurrence days, we found that the distributions of the precipitation frequency for the flood occurrence days are corresponding to those for the whole study period. These results indicate that we can estimate flood damage based on frequency of daily precipitation. Based on these results, we estimated the flood damage for Tokyo based on distribution of daily precipitation frequency. We then created a flood-risk curve that represents the relationship between damage and exceeding probability of a flood. By comparing the newly developed flood-risk curve, based on the precipitation frequency, with those in the previous studies, we indicated that a newly developed flood-risk curve could evaluate the potential flood risk in Tokyo with high accuracy.