Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

AHW29-P04 会場:コンベンションホール 時間:5 月 23 日 18:15-19:30

中国河北省および四川省における異なる表面被覆および勾配の表面流プロットを用いた浸透能の測定
Estimation of infiltration rate in runoff plots for various surface covers and slopes under natural rainfall in Hebei an

小松 義隆 [1], 恩田 裕一 [1*], Xianfang Song[2], Zhu Bo[2], Tao Wang[2], Lihu Yang[2]
Yoshitaka Komatsu[1], Yuichi Onda[1*], Xianfang Song[2], Zhu Bo[2], Tao Wang[2], Lihu Yang[2]

[1] 筑波大学, [2] 中国科学院
[1]University of Tsukuba, [2]Chinese Academy of Sciences

We are investigating the effect of surface cover and slope on the infiltration rate in runoff plots in two provinces of China, namely; Hebei and Sichuan Provinces. Temporal rainfall measurements and discharge of runoff plots were conducted for different surface cover and slopes during the rainy season from July to October 2012. Four land uses (bare soil, forest and two grasslands) were investigated in Yi Xian with 5m $*$ 20m plots. On the other hand, in Yan Ting Xian, we monitored four plots of 1.5m $*$ 5m with various slopes (15, 20, 25, 30 degrees) and three plots of 5m $*$ 20m with maize and bare soil. In order to understand the variability of the infiltration rate, the collected data was analyzed in the light of a model that integrates the spatial infiltration variabilities within a plot. The relationship between rainfall intensity and infiltration rate have been developed in previous study using rainfall simulations for similar land uses which demonstrated that the infiltration rate increases with the rainfall intensity and gradually takes an asymptotic approach to the Maximum Infiltration Rate (FIR_{max}). The effect of different slope range and various land covers will be analyzed so as to draw a profound conclusion. The infiltration rate tends to have a certain relationship between land cover and slope in runoff plots in two provinces of China.
Keywords: Infiltration rate, Natural rainfall, Runoff plot, Slope, Surface cover