Geophysical Research Abstracts,
Vol. 11, EGU2009-1290, 2009
EGU General Assembly 2009

The Effect of various forest disturbances on water discharge duration curve-The Case Comparison between the Sarukawa experimental watershed and the Tatsunokuchi-yama experimental watershed in Japan

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The effects of forest disturbance on the discharge duration curve were compared among various disturbed cases in the Sarukawa experimenta watershed (hereafter Sarukawa), Miyazaki-shi and Tatsunokuchi-yama experimental watershed (hereafter Tatsunokuchi-yama), Okayama-shi. Defining a significance level as 20-30%, the discharge change was judged to be significant in most cases. Although the maximum discharge increase was larger in the Sarukawa than in the Tatsunokuchi-yama, the discharge increase ratio was smaller. More precipitation was thought to reduce the effect of forest coverage on the discharge processes. Discharge increased ratios in both Tatshunokuchi-yama cases were almost equal to be around 50%. Thus, no significant difference in the effect of forest disturbance on discharge was recognized between the cases with disturbed areas of 100% and 84% in the Tatsunokuchi-yama. By contrast, the increased ratios in Sarukawa cases affecting 100% and 43% of the area were around 20% and 13%, respectively. Thus, the difference in the effect of forest disturbance on discharge was recognized between the cases in Sarukawa with the different disturbed areas.