

Application of satellite snow cover for the prediction of runoff of Arun River

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ABSTRACT:

This paper presents the analysis of areal extent snow cover and snowmelt runoff of Arun river of Nepal Himalaya using simple linear regression model from limited available satellite data. The result of the study showed that 84% of the total variation in the discharge is explained by the regression model with the standard error of 18.92 cumecs and the remaining 16% is unaccounted (not explained by the model). The confidence interval on regression line with probability of 95%, within which the predicted values of discharge lies, based on Student t. The t-test further showed that the significant amount of variation in discharge is explained by the derived regression equation at 95% confidence. Therefore the paper concludes that the simple regression model can be improved better by including other variables which influence discharge.

Key words: snow cover, satellite image, runoff, Arun River
