

Design of a flash flood forecast model for the Shullcas River subbasin, Peru

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Seasonal rainfall (September to April) in the Central Andes of Peru is important for agricultural interests, but intense rainfall results in excessive river discharge that damages farmland and urban areas. Flash flood warnings are needed to protect population and enhance civil defense.

The objective of the present work is to develop a statistical model to estimate variations in daily discharge in the Shullcas River subbasin (Huancayo-Peru), using daily satellite precipitation data (Hydro-estimator Technique and the Convective Stratiform Technique). The work compares the estimated discharge with measured discharge and rainfall to determine the technique that best reflects hydrologic and meteorologic data. This model could be used in real time with hourly satellite rain estimates to make short term flash flood predictions and provide alerts.