



Reservoir storage forecasting and monitoring major reservoirs in India

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Real-time reservoir storage information at a high temporal resolution is crucial to mitigate the influence of extreme events like floods and droughts. Despite large implications of near real-time reservoir monitoring in India for water resources and irrigation, reservoir storage forecast has been lacking. We develop a reservoir storage index (RSI) which is similar to Standard Precipitation Index (SPI), to monitor the water storage in the major reservoirs in India. Accumulated precipitation (3-6 months) in the upstream catchment and observed reservoir storage were used to develop the regression-based reservoir storage forecast at 1-3 month lead for the October-May (dry season) period. The forecast skill for reservoir storage and for RSI was good to provide information for the operational purposes. We show the potential of the forecast of reservoir storage in India that can be used for water management during the dry season. We estimated forecasted streamflow in the reservoir for 1-7 days forecast from forecasted forcing data. The forecasted streamflow shows good correlation with observed data. These 1-7 days forecast streamflow will be very effective for the decision making and reservoir operations to mitigate the effect of extreme events like flood and droughts.