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## **Budyko's framework to estimate Runoff sensitivity for the Indian sub-continental river basins**

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Indian rivers are an inevitable part of the nation's economy and society due to which it is necessary to understand the water budget for Indian sub-continental river basins. The available water and energy both play a prominent role in the runoff generation. However, the sensitivity of precipitation and temperature in runoff estimates are not well-explored. Here, we estimate the total runoff using Budyko's original water balance model for 220 sub-basins that are selected based on the major discharge stations in India. The Budyko's total runoff is well correlated with the Variable Infiltration Capacity (VIC) simulated total runoff. Further, we estimate the precipitation elasticity and potential evaporation (PET) sensitivity of total annual runoff using the second-degree linear relation. We find that runoff is more sensitive towards the change in precipitation rather than the change in temperature in Cauvery, South Coast, Pennar, East Coast and Krishna basins. However, Indus and Brahmaputra basins show the contrasting pattern.