

Abstract:

Soil moisture is one of the most important variables that has either direct or indirect impact on almost all hydrologic processes. In-situ point measuring techniques of soil moisture are labour intensive and expensive. Thus, it is very important to develop a hydro-meteorological model for soil moisture simulation. The proposed research work focuses on the exploration of advanced statistical approach to investigate the probabilistic association between soil-moisture and different hydro-meteorological variables. A probabilistic hydro-meteorological approach for simulation of soil moisture will be developed exploiting the association between in-situ soil moisture and meteorological variables. The identified association will be investigated for spatial transferability by linking it to the existing soil characteristics. The developed model will also be utilized for assessing the soil moisture status across the country in a future warmer climate.