



Changes and attributions of pan evaporation, potential evapotranspiration and crop reference evapotranspiration in China

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Evaporation is an important parameter for hydrological, climatic, agricultural and other studies. It is crucial to distinguish definitions of evaporation and use suitable parameter to estimate them. Here, based on meteorological observations at 610 meteorological stations in China, we analyzed trends and attributions of three definitions of evaporation, (crop reference evapotranspiration, potential evapotranspiration and pan evaporation) during 1960-2012. Similar trends and patterns were observed for three kinds of evaporation albeit with different mean values and magnitudes. Four climatic variables including sunlight duration (SD), temperature (T), relative humidity (RH) and wind speed (U) were selected to identify their impact on evaporation trend. Multiple linear regression suggested that SD (31.15%) and U (27.73%) were the top two variables influencing pan evaporation, while SD (29.71%), Rh (29.52%) and U (25.47%) were the most dominate variables influencing crop reference evapotranspiration.