Does remote sensing can improve the robust of monitoring evapotranspiration and precipitation

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Abstract. Hydrological non-stationary and uncertainty have been verified in numerous gauge station observations. Meanwhile, the explanations for these uncertainties are different, such as hydrological reduction distortion and disability, gauge station moved, as well as climate change caused, and so on. In order to reveal the influence of human activities and climate change on hydrological changes, the rainfall-runoff model is widely used to make scenario analysis. In order to increase the robust of data input, multiple data sources were involved. Remote sensing precipitation and evapotranspiration data are usually introduced into the model to enhance the reliability of the simulation. However, remote sensing evapotranspiration and precipitation are non-direct observations, which are affected by a variety of factors and inversion methods, and are usually corrected by surface observations. Based on the principle of consistency, the reliability of remote sensing precipitation data is tested. It was found that the remote sensing data are not consistency in the area lack of surface data. To improve the reliability of remote sensing precipitation and evapotranspiration data, a data mining based correction method is proposed.