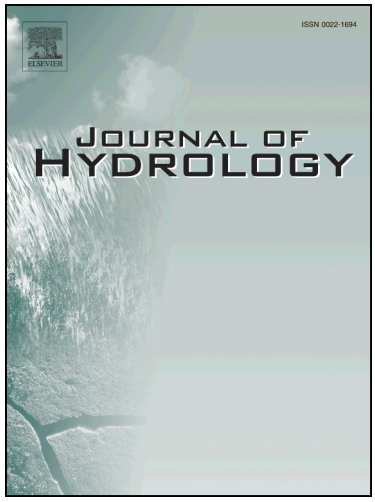

Research papers

Multi-objective assessment of three remote sensing vegetation products for streamflow prediction in a conceptual ecohydrological model

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Multi-objective assessment of three remote sensing vegetation products for streamflow prediction in a conceptual ecohydrological model

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Abstract

This study assesses the implications of using three alternate remote sensing vegetation products in the simulation of streamflow using a conceptual ecohydrologic model. Vegetation is represented as a dynamic component in this model which simulates two response variables, streamflow and one of the following three vegetation attributes: Gross Primary Productivity (GPP), Leaf Area Index (LAI) or Vegetation Optical Depth (VOD). Model simulations are performed across 50 catchments with areas ranging between 50 to 1600 km^2 in the Murray-Darling Basin in Australia. Moderate Resolution Imaging Spectroradiometer (MODIS) LAI and GPP products, passive microwave observations of VOD and streamflow are used for model calibration and/or validation. Single-objective model calibration based on one of the vegetation products (GPP, LAI and VOD) shows that GPP is the best vegetation simulating