

Use of Remotely Sensed Observations for Improved Distributed Hydrological Modeling in the Jemez River Basin

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PURPOSE OF STUDY

Remotely sensed imagery is a useful source of spatiotemporal data for hydrologic models. However, the input datasets used in distributed hydrologic models typically lack spatiotemporal variations. Most model inputs consist of either time-variable point data or static spatial maps. Remote sensing can be a means to obtain model inputs of time-varying surface characteristics, such as land cover and soil conditions. This research is focused on using remotely sensed data in a distributed hydrologic model (TIN-Based Real-time Integrated Basin Simulator, tRIBS) to better understand hydrologic processes in the Jemez River Basin, an important headwater basin in northern New Mexico.

STUDY UNDERWAY

- The preliminary analyses extracted the stream network, floodplain, and other hydrologic features of Jemez River Basin. The field based hydrologic datasets, NEXRAD rainfall data and digital elevation models (DEM) have been acquired for this research.
- This researcher will acquire other remotely sensed data (vegetation, precipitation, snow cover, etc.) and topographic data for better understanding of hydrologic processes. The researcher will also use tRIBS to develop hydrologic models for summer and winter seasons in the Jemez River Basin.

BENEFITS

- This research will improve the hydrologic model simulation using aforementioned remotely sensed data for summer and winter seasons.
- This project also expects to obtain better understanding of the summer and winter hydrology in the Jemez River Basin.



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