Investigating the Use of LIS and Satellite Products to Improve Evapotranspiration Estimates

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AB: Prolonged droughts in different semi-arid regions have increased awareness and research efforts to better understand and predict their impact and effects on water demand. One such effort includes the Land Information System (LIS) project which employs land surface models (LSMs) to incorporate improved land surface parameters and assimilate appropriate, quality-controlled remote sensing and in-situ fields. These enhanced models produce a wide range of water and energy budget variables that can be used in modeling and predicting drought conditions. One region that LIS is being customized for involves the Middle Rio Grande River in New Mexico. The LIS software is being set-up to conduct studies on water consumption and land cover /land use impacts on estimating evapotranspiration. The
satellite datasets used in this work include the TERRA and AQUA MODIS datasets, Landsat, and ASTER. The MODIS land cover type product has been merged with a local, high-resolution land use dataset employed by the decision support system, the Agricultural WAter Resources Decision Support system (AWARDS) – ET Toolbox. This merged dataset has been setup for use in LIS to produce more high-resolution, heterogeneous moisture and energy flux fields, so more of the land use characterization can be captured in monitoring evapotranspiration and other drought–relevant variables. Certain LIS LSM experiment simulations will be evaluated and shown in relation to other observation datasets. Also, initial comparisons of the LSMs ET results with the AWARDS ET Toolbox evapotranspiration output will be presented.

UR: http://lis.gsfc.nasa.gov
DE: 0466 Modeling
DE: 1818 Evapotranspiration
DE: 1855 Remote sensing (1640)
SC: Hydrology [H]
MN: Fall Meeting 2005