

AQRP Monthly Technical Report

PROJECT TITLE	Use of Satellite Data to Improve Specifications of Land Surface Parameters	PROJECT #	17-039
PROJECT PARTICIPANTS	Richard McNider, Arastoo Pour –Biazar, Kevin Doty, Yuling Wu	DATE SUBMITTED	2/10/2017
REPORTING PERIOD	From: January 1, 2017 To: January 31, 2017	REPORT #	3

A Financial Status Report (FSR) and Invoice will be submitted separately from each of the Project Participants reflecting charges for this Reporting Period. I understand that the FSR and Invoice are due to the AQRP by the 15th of the month following the reporting period shown above.

Detailed Accomplishments by Task

(1) *Task 2 - Use of Skin Temperature Tendencies*

Sources of Skin Temperature Data: Work has continue on new processing code for skin temperature data is being installed and satellite data is being collected for the 2012 period. Chris Hains of NOAA has provided their processing code.

Skin Temperature anomalies: Also under this task we have revisited an issue with the previous Pleim-Xiu use of skin temperatures to adjust moisture. We began to look at errors by time of day. There appears to be some temporal patterns to the error. In looking at the source of this error we revisited literature which indicated that satellite observed skin temperatures may different values relative to view angles and sun angles primarily related to shading effects in canopies. Using tendencies rather than absolute values avoids these issues. However, use of anomalies rather than absolute values can reduce this effect. Thus, we plan to re-run September 2013 using anomalies

Preliminary Analysis

Data Collected

We are starting the process of obtaining vegetative fraction for 2013 and 2012 periods.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

No new issues but we are concerned about view angle issues using absolute temperatures in the Pleim-Xiu scheme.

We are also looking at changes in WRF regarding Obsgrid settings and have contacted EPA about suggested weighting factors.

Goals and Anticipated Issues for the Succeeding Reporting Period

Make 2013 runs with temperature anomalies.

Detailed Analysis of the Progress of the Task Order to Date

Project is on track

Submitted to AQRP by: Richard McNider

Principal Investigator: Richard McNider