Peng Yu   P-8 A Prototype System for Satellite LST Product Monitoring and   Yunyue Yu, Zhuo Wang, and
              Retrieval Algorithm Evaluation   Yuling Liu

Land surface temperature (LST) is of fundamental importance to many aspects of the geosciences, e.g., the net radiation budget at the Earth surface and to monitoring the state of crops and vegetation, as well as an important indicator of both the greenhouse effect and the energy flux between the atmosphere and the land. As one of the key products in both JPSS and GOES-R missions, it is crucial to keep improving the retrieval algorithm and monitor the product once the LST production is in its operational mode.

The LST algorithm work group (AWG) has been focusing on developing multiple systems to facilitate the monitoring and improvement of the LST product, including the regression package for retrieval algorithm coefficient generation, the routine validation and deep-dive system, and a prototype long term monitoring (LTM) system for both GOES-R and JPSS. While each tool package is a stand-alone system and has its own application, a merged system combining the three will better and more efficiently serve the need of the LST retrieval. The regression package includes a comprehensive simulation database from MODTRAN and generates the coefficients for different algorithms, which will be evaluated by the validation tool software. The LTM system monitors LST production from multiple satellites in near real time, including GOES-E, GOES-W, SNPP-VIIRS, MODIS-AQUA, and will include more satellites, e.g., GOES-R, JPSS, and Sentinel, etc. Meanwhile, it produces the proxy data set from these satellite sensors, which will be used by the validation system for algorithm evaluation.

This study presents the most recent progress towards this goal and some preliminary results of a few case studies.