



Assimilating FY3A MWRI+VIRR Window Channel Data into Chinese Land Data Assimilation System

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Land surface is an important interface that exchanges energy with atmosphere, which is controlled by many key factors such as albedo, soil moisture, soil temperature, surface roughness, soil emissivity and more, where albedo and surface emissivity will contribute to the energy redistribution, soil temperature may directly affect the sensible heat in land-atmosphere exchange and soil moisture controls the partitioning of the latent and sensible heat fluxes to the atmosphere, influencing precipitation recycling.

For the land products retrieved from the remotely sensed datasets better using in the land surface model and weather/climate model to improve the exchange interface between atmosphere and land surface, the Chinese Land Data Assimilation Systems (LDAS) based on EnKF, 3Dvar Technology and Community Land Model, has been developed at NSMC/CMA. In the context of numerical weather prediction applications, LDAS can provide optimal estimates of land surface state initial conditions, such as soil moisture and soil temperature, by integrating with an ensemble of land surface models, the available atmospheric forcing data, remotely sensed observations of precipitation, radiation and some land surface parameters such as land cover and leaf area index.

On 27 May 2008, China has successfully launched the FY-3A meteorological satellite as a research and development (R&D) satellite, with 11 payloads mounted, containing 3 earth observation instruments: Visible and InfraRed Radiometer (VIRR), MEdium Resolution Spectral Imager (MERSI) and MicroWave Radiation Imager (MWRI), which will help to improve our understanding in land surface process and forecast skill to land surface temperature and moisture. In this paper, some works on assimilating FY3A MWRI+VIRR Window Channel Data into Chinese Land Data Assimilation System are introduced and the preliminary results are demonstrated.