

Satellites and Satellite Observing In The Future

Mark A Bourassa¹ and Eric J. Lindstrom²

1. Dept. of Meteorology & Center for Ocean-Atmospheric Prediction Studies, Florida State University, Tallahassee, FL 32306-2840; mbourassa@fsu.edu

2. NASA HQ, Science Mission Directorate, Earth Science Division, Washington, DC, USA

Abstract:

Future satellite missions and capabilities will be discussed in the context of surface fluxes. Improved capabilities on existing satellites will also make substantial improvements in regional and global estimates of surface fluxes. For example, improved retrievals of 10m atmospheric air temperature and humidity will improve estimates of turbulent heat fluxes. Improved retrievals of surface stress will reduce seasonal and regional biases in dynamic coupling of the ocean and atmosphere, and will also reduce biases in heat fluxes associated with sea state and ocean currents. Examples will be provided for the impact of sampling on estimates of the CO₂ flux. The timing of future missions, and potential gaps in the climate record will be discussed.