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Fire Monitoring from the New Generation of US Polar and Geostationary Satellites

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Sensors on the new generation of US operational environmental satellites will provide measurements suitable for active fire detection and characterization. The NPOESS Preparatory Project (NPP) satellite, launched on October 28, 2011, carries the Visible Infrared Imager Radiometer Suite (VIIRS), which is expected to continue the active fire data record from the Moderate Resolution Imaging Spectroradiometer (MODIS) on the NASA Earth Observing System Terra and Aqua Satellites. Early evaluation of the VIIRS active fire product, including comparison to near-simultaneous MODIS data, is underway. The new generation of Geostationary Operational Environmental Satellite (GOES) series, starting with GOES-R to be launched in 2015, will carry the Advanced Baseline Imager (ABI), providing higher spatial and temporal resolution than the current GOES imager. The ABI will also include a dedicated band to provide radiance observations over a wider dynamic range to detect and characterize hot targets. In this presentation we discuss details of the monitoring capabilities from both VIIRS and ABI and the current status of the corresponding algorithm development and testing efforts. An integral part of this activity is explicit product validation, utilizing high resolution satellite and airborne imagery as reference data. The new capabilities also represent challenges to establish continuity with data records from heritage missions, and to coordinate compatible international missions towards a global multi-platform fire monitoring system. These objectives are pursued by the Fire Mapping and Monitoring Implementation Team of the Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD) program, which also provides coordinated contribution to relevant initiatives by the Committee on Earth Observation Satellites (CEOS), the Coordination Group for Meteorological Satellites (CGMS) and the Global Climate Observing System (GCOS).