## Smoke Plume Detecting Using MODIS Measurements in Eastern United States

## Yong Xie, John J. Qu1, Xianjun Hao Jack Xiong and Che

Wildland fire is one of natural sources of air pollution in the eastern United States. Both wildfire and priscribed fire can generate smoke which can pose a major heath risk. The ability to know the feature of smoke generated in forest fire using remote sensing has benefited the monitoring of forest fire. The severity and the spread direction of forest fire can be estimated by retrieving the motion, density, and thickness of smoke. A smoke index was developed based on the smoke physical properties using both MODIS solar reflectance bands (SRB) measurements. The smoke images in different burned areas are derived with smoke index based on fire characteritices, such as active fire and burned area, derived from satellite measurements in the east states. Moreover, a precision analysis is also given to estimate the uncertainty of the smoke index. The calibration sensitivity to smoke detecting and validations using ground measurements are also discussed in this paper.