**NASA DEVELOP National Program**

****NASA John C. Stennis Space Center

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**Short Title: Southern California Disasters II**

**Updated Abstract**

California Disasters II Abstract:

Currently, the USDA Forest Service has multiple programs in place (e.g. BARC and RAVG) which monitor post-fire burn severity. These programs primarily utilize Landsat imagery to produce burn severity indices, such as dNBR and RdNBR. When the Hyperspectral Infrared Imager (HyspIRI) is launched, its hyperspectral resolution will support new methods for assessing natural disaster impacts on ecosystems, such as wildfire damage to forests. Since it is critical to evaluate and understand the capabilities and limitations of this satellite prior to its proposed launch date in 2022, NASA conducted an airborne campaign to simulate HyspIRI data. In 2013, 2014, and continuing into 2015, HyspIRI data were simulated from co-located AVRIS and MASTER sensors onboard a NASA ER-2 aircraft. A NASA DEVELOP project completed in the summer of 2014 focused on computing and qualitatively comparing different indices using simulated HyspIRI data to detect fire burn severity. This research expanded upon those efforts and calculated several burn severity products using simulated HyspIRI data collected for three southern California fires from 2013 and 2014: Aspen, French, and King. The results were then quantitatively compared to the USFS products currently in use. The final results from this project were used to enhance vegetation assessment of fire damaged areas and provide additional monitoring tools for decision support to agencies such as the USDA Forest Service.