

Improved Characterization and Monitoring of Moisture Associated With Atmospheric Rivers

*** Gutman, S.**

Seth.I.Gutman@noaa.gov

NOAA Earth System Research Laboratory, Boulder, CO 80305-3328

Birkenheuer, D.

Daniel.L.Birkenheuer@noaa.gov

NOAA Earth System Research Laboratory, Boulder, CO 80305-3328

Holub, K.

Kirk.L.Holub@noaa.gov

NOAA Earth System Research Laboratory, Boulder, CO 80305-3328

Wick, G.

gary.a.wick@noaa.gov

NOAA Earth System Research Laboratory, Boulder, CO 80305-3328

Albers, S.

steve.albers@noaa.gov

Cooperative Institute for Research in the Atmosphere and NOAA Earth System Research Laboratory, Boulder, CO 80305-3328

Forsythe, J.

Forsythe@cira.colostate.edu

Cooperative Institute for Research in the Atmosphere, Colorado State University, Fort Collins, CO 80523

Jones, A.

Jones@cira.colostate.edu

Cooperative Institute for Research in the Atmosphere, Colorado State University, Fort Collins, CO 80523

Kidder, S.

Kidder@cira.colostate.edu

Cooperative Institute for Research in the Atmosphere, Colorado State University, Fort Collins, CO 80523

Ward, B.

bill.ward@noaa.gov

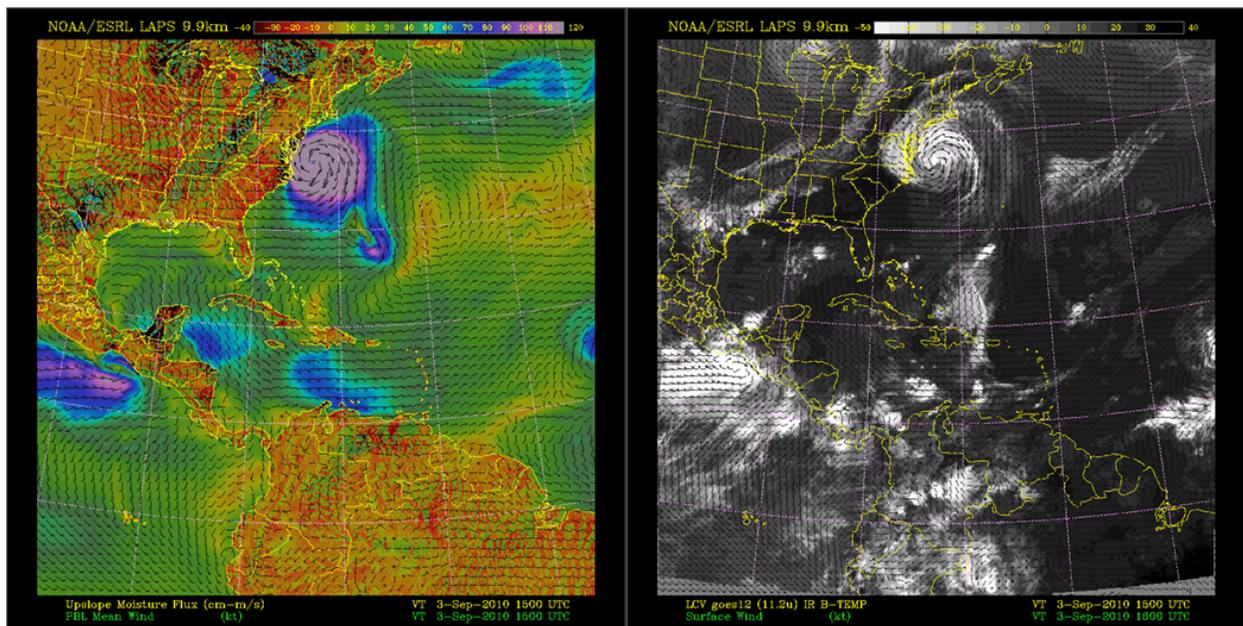
NOAA National Weather Service, Honolulu, HI 96813-3213

White, A.

allen.b.white@noaa.gov

NOAA Earth System Research Laboratory, Boulder, CO 80305-3328

The accurate characterization of atmospheric moisture fields (including water vapor and clouds) is essential for improved forecasts of cool- and warm-season heavy precipitation events associated with Atmospheric Rivers (AR) and AR-like events observed around the world. Our experience with the Atmospheric River Observatories established along the West Coast of North America has resulted in the development and implementation of new tools and techniques to quantify the characteristics of AR's at landfall, and new techniques to quantify observation errors and monitor the accuracy of satellite water vapor observations over the open ocean. This presentation describes the instruments and methodologies, presents initial results of their practical implementation, and discusses plans to expand these capabilities into other regions including the Southeast U.S. and Western Pacific.



Accompanying Figure: Entrainment of moisture associated with TS FIONA into H EARL. GOES infrared (11.2μ) brightness temperature valid at 15 UTC on 3 SEP 2010 (right) and experimental moisture flux analysis valid at the same time (left).