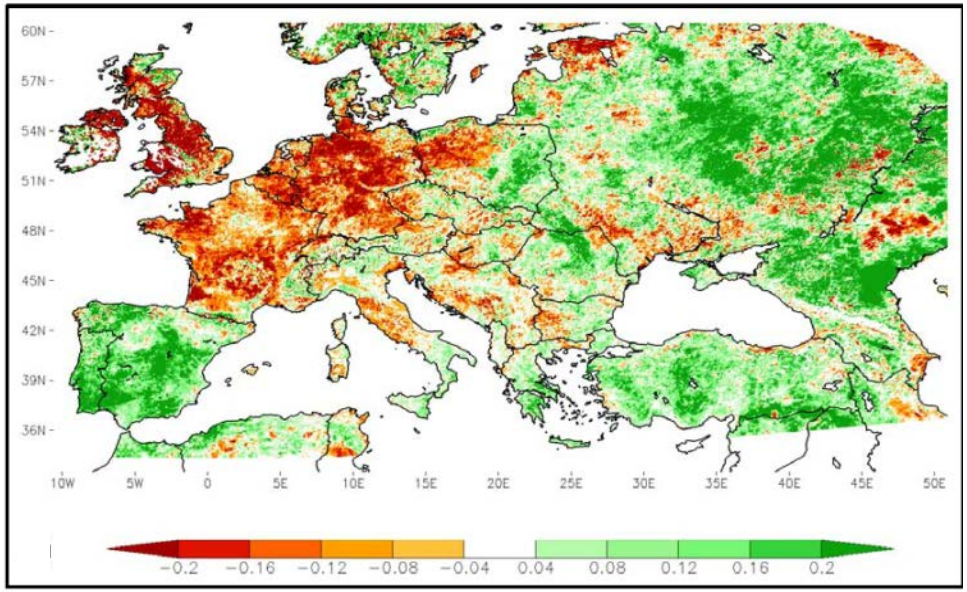
Enhancing NCEP-NAM Weather Forecasts via Assimilating Real-time GOES-R Observations of Land Surface Temperature and Green Vegetation Fraction

- Studies have shown the unique value of satellite-based LST and vegetation cover information to land surface models (LSMs)
- Current NCEP Noah LSM within NAM uses only a multiyear climatology of green vegetation fraction (GVF) although land-atmosphere interactions are well known to be sensitive to realistic vegetation status
- The assimilation of an ALEXI f_{PET} product into an uncoupled Noah LSM has shown significant improvements in SM estimates while avoiding the issues caused by the direct assimilation of LST data
- FY14-15 R3 project aims at assessing the impact on NCEP-NAM weather forecasts by assimilating real time GOES/GOES-R GVF, LST, and GOES/GOES-R LST based ALEXI SM retrievals



ALEXI Evaporative Stress Index (red shaded pixels show stress) for May 2011, generated by NESDIS In-house GOES/GOES-R based ALEXI system

NCEP NAM data assimilation utility for assimilating the GOES LST and ALEXI SM proxy in real time

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