



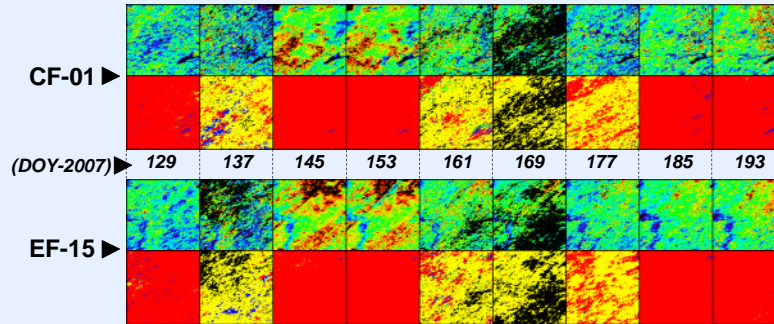
# Assessment of Albedo Derived from MODIS at the SGP Site



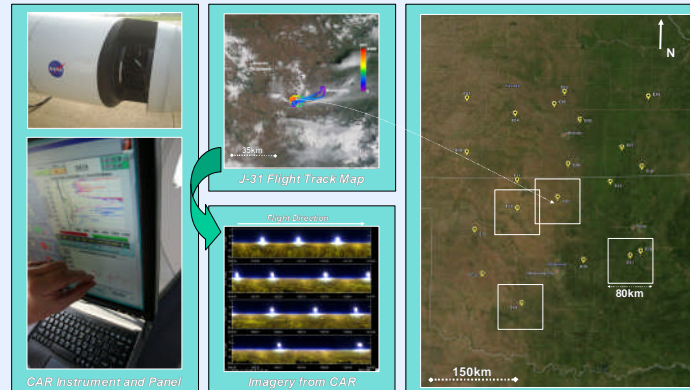
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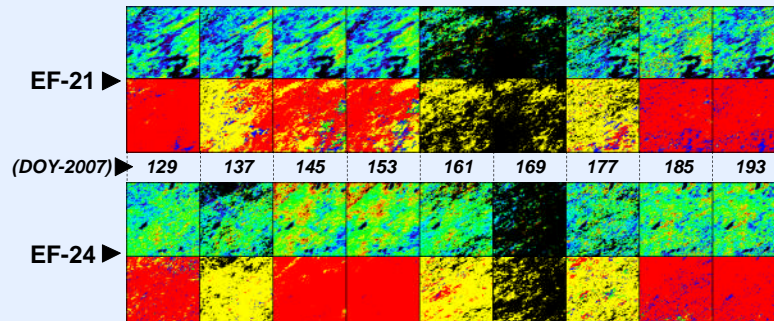
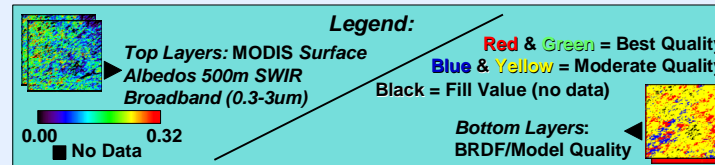
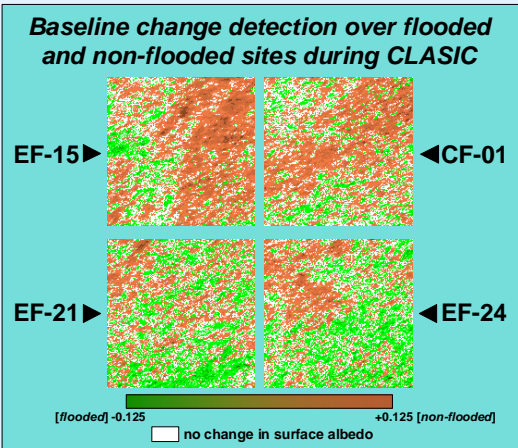
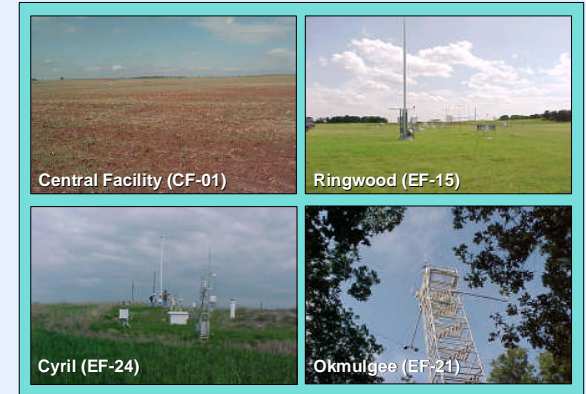
The moderate-resolution imaging spectroradiometer (MODIS) bidirectional reflectance distribution function (BRDF)/Albedo algorithm makes use of all cloud-free, atmospherically corrected, directional surface reflectances available over a multi-day period to retrieve a 500m land surface BRDF model. This model is then integrated to supply directional hemispherical reflectance (black-sky or completely direct albedo) and bihemispherical reflectance under isotropic illumination (white-sky or wholly diffuse albedo). By using optical depths measured in the field at the ARM Climate Research Facility (ACRF) Southern Great Plains (SGP) facilities, the MODIS BRDF models can be used to establish satellite-based surface albedos for the region throughout a day. Field albedos collected at several sites in the SGP area can then be used to evaluate these MODIS-derived albedos.



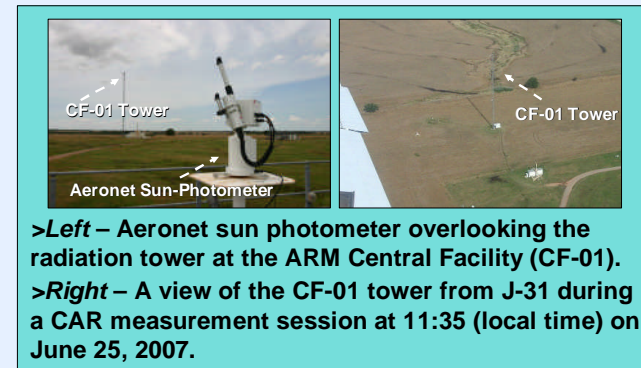
Spatial (80km x 80km subsetting) and Temporal Characterization at the SGP during CLASIC



The Cloud Absorption Radiometer was deployed on several flights by the J-31 during June 2007. The availability of the airborne CAR data, as well as additional high-resolution imagery (such as from Atmosphere-Surface Turbulent Exchange Research [ASTER]) allows for a more rigorous scaling of the ground-based point measurements up to the moderate resolution MODIS pixels in this region of heterogeneous surface covers.



Several sites during CLASIC were instrumented to obtain ground-based albedo and aerosol measurements to link MODIS and CAR retrievals. SGP sites Central Facility (CF-01) and the Extended Facility served as permanent stations. The other sites were located in pastured lands near the Little Washita Watershed (EF-24) and oak forests near Okmulgee State Park (EF-21).



Tower albedometer data collected during the Cloud Land Surface Interaction Campaign (CLASIC) field campaign are being used in conjunction with multiangular and multispectral observations obtained by National Aeronautics and Space Administration's (NASA's) Cloud Absorption Radiometer (CAR) to assess the accuracy of the MODIS albedos.