**ABSTRACT**

ECOR (eddy correlation) systems are being added to the Tropical Western Pacific (TWP) and North Slope of Alaska (NSA) ARM Climate Research Facilities (ACRF) to provide surface to air exchange measurements of heat, water vapor, and carbon dioxide. Furthermore, all ECOR systems, including those already installed at the Southern Great Plains (SGP) ACRF and in the ARM Mobile Facilities (AMF, AMF2), will be supplemented with a new instrument system (SEBS) that will allow the surface energy balance to be estimated. This poster shows photos of some of the potential ECOR installation sites at TWP and NSA, and provides information on the new surface energy balance system.

**APPLICATION**

Energy balance closure is normally not achieved with ECOR measurements. The causes of this can be many, but recently some researchers have attempted to adjust ECOR measurements to produce a balance. This has sometimes been accomplished by evenly partitioning the "missing" energy into both sensible and latent heat fluxes. The energy balance, determined from a net radiometer and soil surface heat flux measurements, can be used as a guide in this process. Measurements from the SEBS will be incorporated into the ECOR VAP and thus provide one datastream from which the energy balance closure can be determined and the sensible and latent heat fluxes adjusted.

The equipment for the new ECOR systems and the new SEBS were purchased using ARRA funds.

**SEBS**

**PURPOSE:**

Provide an estimate of the surface energy balance for comparison to and as a supplement to the ECOR system measurements at SGP, TWP, NSA, AMF, and AMF2.

**COMPONENTS:**

- CNR4 Precision Net Radiometer with CNF4 Ventilator
- DRD-11A Wetness Sensor
- STP-1 Soil Temperature Probes
- SMP1 Soil Moisture Probes
- HFT-3 Soil Heat Flow Transducers

**DATA ACQUISITION:**

- CR1000-XT datalogger
- AM16/32B-XT multiplexers.

**ENCLOSURE:**

- SGP - enclosure (separate from the ECOR) attached to the triangular tower
- AMF and AMF2 - integrated into the ECOR enclosure/module
- NSA and TWP - ECOR and SEBS in same enclosure.