The 6th Annual FLUX COURSE
July 2013

Annual Summer Course in Flux Measurements and Advanced Modeling: Training scientists in observations and models to advance carbon cycle science

David JP Moore,¹ Paul C Stoy² & Russell K Monson¹
(1) University of Arizona, School of Natural Resources and the Environment, (2) Montana State University, Dept. of Land Resources and Environmental Sciences

The flux course seeks to cross train attendees in measurement techniques and advanced modeling approaches for quantifying carbon and water fluxes between the atmosphere and the biosphere. The course will be offered to 24 graduate students, post-docs and early career scientists. The 6th annual flux course will take place the University of Colorado Mountain Research Station from the 15th through the 26th of July this summer.

THEORY
Formal lectures and tutorials
Directed reading of literature
Online videos for later use
Discussion with leading scientists

PRACTICE
Hands on measurements
Build an eddy covariance system
Computer tutorials
Class exercises

INTEGRATE
Group project synthesis
Perspective discussions
Tour of Niwot Ameriflux Site
Tour of NEON headquarters

MEASUREMENTS
Leaf Level Gas Exchange Measurements
Leaf Level Biochemistry (Farquhar Model)
From Leaf to Canopy (Penman-Monteith)
Theory and Measurement of Canopy Fluxes
Eddy Flux Measurement, Sonics and Sensors
Applications of Flux Tower Networks
Using Eddy Covariance Instrumentation
Use of Stable Isotope to Infer Fluxes
Ecosystem Energy and Mass Fluxes

MODELING
The Challenge of Data and Models
Principles of Modeling Ecosystem Fluxes
Satellite Observations and Surface Fluxes
Theory and Practice of Data Assimilation
Extracting Information from Data
Combining Multiple Data Streams
Regional and Global Model Flux Estimates
Informing Land Surface Models with Data
The Global Carbon Cycle

Instructors 2013: Dennis Baldocchi (University of California), Carl Bernacchi (University of Illinois), Mike Dietze (University of Illinois), Deborah Huntzinger (Northern Arizona University), Larry Jacobsen (Campbell Scientific, Inc.), Ray Leuning (CSIRO, Australia), Andrew Fox & Hank Olescher (NEON, Inc.), Pat Morgan and George Burza (L-IO/S biosciences), Marcy Livak (Univ New Mexico), Russell Monson, David Moore and Shirley Papuga (University of Arizona), Tristan Qualife (Reading University), Dave Schimel (NASA JPL), Paul Stoy (Montana State), Ed Swiatek (Campbell Scientific, Inc.), Diane Pataki (UC Irvine), John Zobitz (Augsburg College).

All lessons are available to course attendees online. Check out last year’s course video via the link opposite:

For more information about the course and application instructions, follow the link to the website www.fluxcourse.org