EastFIRE Lab/ESTC Field Experiment at USDA/ARS

During July 21-23 2009, EastFIRE Lab team of the Environmental Science and Technology (ESTC) had a field experiment at USDA/Agricultural Research Service (ARS) in Beltsville, Maryland, led by Prof. John Qu, the director of ESTC, and Dr. Raymond Hunt from USDA ARS. Dr. Xianjun Hao, Dr. Lingli Wang, Ms. Dan Xu and Mr. Di Wu from EastFIRE Lab/ESTC attended the field experiments.

ARS is the U.S. Department of Agriculture's chief scientific research agency. The primary objectives of this field experiment were to collect comprehensive spectral information of typical leaf samples, so as to validate satellite remote sensing products and pre-launch the procedures for a database establishment. More than 170 leaf samples of various vegetation spices, including grasses, crops and trees, were collected and measured for the following parameters:

1. Leaf spectral characteristics (reflectance and transmittance) for different spices and ages;
2. Vegetation Moisture Content (VWC);
3. Leaf Area Index (LAI);
4. Leaf thickness;
5. Leaf Chlorophyll content;
6. Leaf dry matter content.

EastFIRE Lab/ESTC team has been carrying out extensive works in vegetation remote sensing. In order to quantify the response of leaf spectral reflectance and transmittance, various parameters have been studied according to the collected field measurements, which will lead to an improvement in algorithms and data products developed at EastFIRE Lab/ESTC.