

Workshop Summary

*International Workshop*

*"Ecophysiology at high temperatures and drought"*

organized by TERRABITES- Working Group 1: Modeling Plant Functioning

Avignon, France, March, 7-8, 2011

The current generation of Earth System Models simulate a *ca.* 300  $\mu\text{mol mol}^{-1}$  variation in future CO<sub>2</sub> concentrations by 2100<sup>1</sup>. Much of this spread is related to uncertainties in the response of land ecosystems to changing environmental conditions<sup>1,2</sup>. In addition, recent warming has been shown to negatively impact crop yields at a global scale<sup>4</sup>. A key issue is how ecosystems will respond to future warming and drought. Working group 1 (WG1) Modeling Plant Functioning, hosted a workshop on 'Ecophysiology under high temperature and drought', March 7-8, 2011, hosted at INRA in Avignon, France. The objective of this workshop was to bring together a diverse group of 16 international experts covering the fields of modelling, observation and experimental communities to discuss ecophysiology at high temperatures in ecosystems, and how we can improve its representation in models of the Earth System. Oral presentations covered a wide-range of topics from implications of uncertainty in land parameters on projected future climate change, to plant response to high temperatures and drought, both at a physiological (leaf and plant hydraulics) and ecosystem level. As an outcome of the workshop we will explore the possibility of writing a short review study on ecophysiology at high temperatures, and further WG1 workshops will continue on related themes.

**References**

1Friedlingstein P, et al. *Journal of Climate*, 19, (2006)

2 Sitch, S, et al., *Global Change Biology*, 14, 1-25 (2008)

3. Lobell, DB, *Field C Environ. Res. Lett*, 2 014002 doi: 10.1088/1748-9326/2/1/014002