

Interactive comment on “CEFLES2: the remote sensing component to quantify photosynthetic efficiency from the leaf to the region by measuring sun-induced fluorescence in the oxygen absorption bands” by U. Rascher et al.

E. M. Middleton (Referee)

elizabeth.m.middleton@nasa.gov

Received and published: 7 April 2009

Biogeosciences Discussion 6, 2217-2266, 2009.

Ms. Review: CEFLES2: the remote sensing component to quantify photosynthetic efficiency from the leaf to the region by measuring sun-induced fluorescence in the oxygen absorption bands Author List: Rascher, Agati, Alonso, Cecchi, Champagne, Colombo, Damm, Daumard, de Miguel, Fernandez, Franch, Franke, Gerbig, Gioli, Gomez, Goulas, Guanter, Gutierrez-de-la-Camara, Hamdi, Hostert, Jimenez, Kosvan-

C93

cova, Lognoli, Meroni, Miglietta, Moersch, Moreno, Moya, Neininger, Okujeni, Ounis, Palombi, Raimondi, Schickling, Sobrino, Stellmes, Toci, Toscano, Udelhoven, vsn der Linden, and Zaidei

This paper provides an excellent summary of the 2007 CEFLES2 field experiment, and other related or associated field measurements. The CEFLES2 covered three time periods in the 2007 growing season in Southern France, during which field-based, tower, and aircraft measurements were acquired over a variety of vegetation canopies. Measurements spanned the range from leaf-level gas exchange and pigments in specific field sites coupled with canopy spectral and biophysical measurements, to tower-based fluxes and spectral measurements at Carbo-Europe research sites, to aircraft-based fluxes and spectral measurements collected along transects across these field sites. The paper begins with an overview of the photosynthetic process and relationship to solar-induced chlorophyll fluorescence. The various types of measurements and the instrumentation to acquire these measurements are described, followed by summary results illustrating each general type of observation and result obtained. I found the figures to be of good quality and informative. My primary recommendation to improve this manuscript is the inclusion of a large table that summarizes the Experimental Design, with instruments and their characteristics placed there, along with the types of vegetation observed and the time periods, etc. Any summary material that can be placed in this table will be helpful to the reader, and should allow for condensation of some repetitive text when referring to the same instruments used in different aspects. Please correct the description of the vegetation index, the NDVI. This should be notated as the Normalized Difference Vegetation Index. It is both correctly and incorrectly stated several times.

Interactive comment on Biogeosciences Discuss., 6, 2217, 2009.

C94