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Interactive comment on "Retrieval of the photochemical reflectance index for assessing xanthophyll cycle activity: a comparison of near-surface optical sensors" *by* A. Harris et al.

Anonymous Referee #3

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General comments: In this study two different instruments for spectral measurements the Skye SKR1800 and the PP-systems UniSpec. The final goal of the study is to recommend strategies for the effective use and comparison of data from both sensors. The topic is pertinent with the scope of the journal. continuous monitoring of ecosystems through unattended sensors increased largely in the last years. The interest in continuous monitoring of ecosystems through unattended sensors increased largely in the last years raising a need for the standardization and comparison of measurements. This study can be an important contribution in this area. The experiment was well planned and executed. The manuscript is well written. Methods and results are correctly described. The Discussion needs an improvement for clarity. I would suggest

to split the text into specific paragraphs. Specific comments: -Page 11917 line 1-5 and figure 5. The larger fluctuation in the PRI response is more evident in the Unispec than in the SKR1800 in the Aspen. Any comment on this? -Page 11919 line 5 and fig. 10 The figure 10 shows linear regression between EPS and PRI derived from the SKR1800 and the UnisSpec canopy and leaf measurements. It would of major interest to estimate the regression, not only evaluate the correlation coefficients. A comparison of the slopes would be of great benefit to the knowledge on the relative sensitivity of the sensors to physiological changes (expressed by EPS) and facilitate the comparison between instruments. In addition, potential differences in the regression line are mentioned in the discussion to explain differences between leaf and canopy measurements (page 11921 line 29). Technical details: -Page 11913 2.2 Experimental set-up. Further details on leaf measurements would be desirable. -Page 11913 2.3.1 line 24 details on plants age and size are lacking. -Page 11914 line 1 and following. It is unclear how the excess of irradiation could mask the effects of canopy structure in the short term. -Page 11915 line 6. Again few indications on the size and density of trees would be desirable. "closed-canopy stand" . The term stand is used in forestry to indicate a community of trees in the field, it cannot be applied to potted trees.

Interactive comment on Biogeosciences Discuss., 11, 11903, 2014.