

Interactive comment on “Vegetation composition and soil microbial community structural changes along a wetland hydrological gradient” by W. K. Balasooriya et al.

Anonymous Referee #2

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"General comments" This paper deals with an interesting methodological approach for investigating the changes of vegetation composition and soil microcosm under a hydrological gradient in a natural wetland ecosystem. The final objective is to point out the relationships among the hydrological fluctuations, the distribution of vegetation compositions and the structural differences of the microbial community. In spite of the complexity of the treated matter, it is a pleasure to read this manuscript for its clearness and comprehensibility. The scientific language used, the correctness of formulae and abbreviations contribute to the understanding of the research progress and outcomes. The description of experimental methodologies used is complete, Authors give

an authentic possibility of reproducing each phase of the investigation. The methods used are not innovative in themselves; as Authors made it clear in the introduction section, stable isotope probing of phospholipid fatty acids in soil and plants has been widely used in previous works cited as well as $^{13}\text{CO}_2$ pulse labelling of growing plants. The novelty of the scientific approach is based on the contemporary utilisation of the best technologies and analytical methods available for obtaining the more rigorous results in the contest of an intelligent research idea, which is relevant for the scientific concern of HESS.

"Specific comments" Title reflects the contents of the paper Abstract is well written. References are appropriate. Conclusions are suitable in relation to results and discussion Some remark about the absence of detailed description of several methods used during the work. These description can be incorporated in the text of the manuscript or can be given as enclosed materials (annexed technical notes): p. 3875, line 24: please, describe method and materials used for CO_2 injections; p. 3876, line 24: please, briefly describe analytical and instrumental conditions for spectrometric measurements; p. 3877, lines 12-25, specify dimensions of silica gel columns, how much chloroform and acetone was used for elution, how much methanol for recovery of lipids; please, describe better the method of transesterification (concentration of KOH in the final reaction mixture); specify operative conditions of spectrometer.

"Technical corrections" p. 3875, line 23: Change 8220;plexi glass8221; in Plexiglas; p. 3876, line 2: Change 8220;monitered8221; in monitored; , line 16: Change 8220;solution8221; in suspension; p. 3881, line 14: Table 3 has been cited first time before Table 2 (p. 3882, line 10); p. 3883, line 18: 8220;Could be shadowed8221;, better: could have been shaded (or shadowed); p. 3890, line15: 8220;realtive8221; in relative; line 25 8220;favours8221; in favor (see also p. 3892, line 15). Fig. 2: pay attention to the color of lines in the inset

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