

***Interactive comment on “Technical Note:
Development of an automated lysimeter for the
calculation of peat soil actual evapotranspiration”
by S. Proulx-McInnis et al.***

Anonymous Referee #1

Received and published: 6 June 2011

Scientific Relevance In many regions of the world, peatlands were drained for agriculture. As a result, the ecosystem service of wetlands have changed from a sink to a source of carbon and other chemicals. The intensity of carbon release depends on the soil water conditions, and therefore on the depth of the groundwater level. To successfully restore and conserve peat soils, quantification of water demand of peat soil is a necessity. For this purpose, methods are needed which enable the measurement of water demand of peat soils at different groundwater/ soil moisture conditions.

Comments The manuscript of Proulx-McInnis et al. deals with the measurement of

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evapotranspiration in peatland soils using a simple lysimeter system. The used method is based on the lysimeter technique developed by Schwärzel & Bohl (2003). In comparison to Schwärzel & Bohl, the lysimeter of Proulx-McInnis et al. is almost identical. The only difference between these two lysimeters is that Proulx-McInnis et al. equipped the lysimeters with data loggers. Therefore, the lysimeter of Proulx-McInnis allows the quantification of evapotranspiration rate at daily or even at hourly time-scale (in contrast to Schwärzel & Bohl). Furthermore, it is the first time that the lysimeter technique of Schwärzel & Bohl, and the underlying installation principle was applied outside of Germany.

This is a solid paper, well-written, and good structured. The scientific significance, the scientific quality, and the presentation quality are good. However, as a technical note, the paper is quite long. Also, the lysimeter technique is not really new. Therefore, I recommend changing the title of the paper. For instance: “Automated foil lysimeter for determination of actual evapotranspiration of bog in Quebec, Canada”.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 5009, 2011.

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