

Interactive comment on “Evaporation in a Mediterranean environment by energy budget and Penman methods, Lake Baratz, Sardinia, Italy” by F. Giadrossich et al.

F. Giadrossich et al.

filippogiadrossich@hotmail.com

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1) We will include the new figure and how the vertical columns are discretized (including a definition of h) in the revised manuscript.

2) In Eq (4) $A(t)$ is evaluated at the lake surface and thus depends on the depth of the water column which varies with time. We will make this more explicit in the revision by changing $A(t)$ to $A_{\{z=z_{surf}\}}(t)$ in eq. 4

3a) Indeed our calculations show that averaging has an effect on evaporation, up to 16% in Spring. We will include a discussion of this (and our new calculation) in the

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revision.

3b) Webb (1960,1964) derived a correction for the effect of fluctuating Bowen ratio on heat-budget estimates of evaporation, making use of subsidiary measurement of wind. We compared the Bowen ratio with and without wind (averaging the data before and after the calculation of the Bowen ratio). The correction was found important only in winter (see Figure below) due to the peaks of wind in winter that introduce erroneous values. We then recalculated evaporation from Lake Baratz (see Figure below). The difference on evaporation is significant only in winter (when evaporation is lower). Mean annual difference on evaporation is 0.07 mm day⁻¹, standard deviation 0.33 mm day⁻¹, or, equivalently, an annual difference of 25 mm year⁻¹ (2.6%).

4) We completely agree with the reviewer that the temperature gradient in the lake and the depth of the thermocline dictates the amount of heat storage released in the autumn. We will include a comment regarding the blocking effect of the thermocline in our revision

5) Good point. The comment regarding data acquisition will be moved in the data section.

6) We will recheck that all references are correctly accounted for.

We thank the referee for its comments and we are available for any further questions and suggestions.

Best regards, Filippo Giadrossich

References Webb, E. K. "On estimating evaporation with fluctuating Bowen ratio." Journal of Geophysical Research 65.10 (1960): 3415-3417. Webb, E. K. "Further note on evaporation with fluctuating Bowen ratio." Journal of Geophysical Research 69.12 (1964): 2649-2650.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 1901, 2015.

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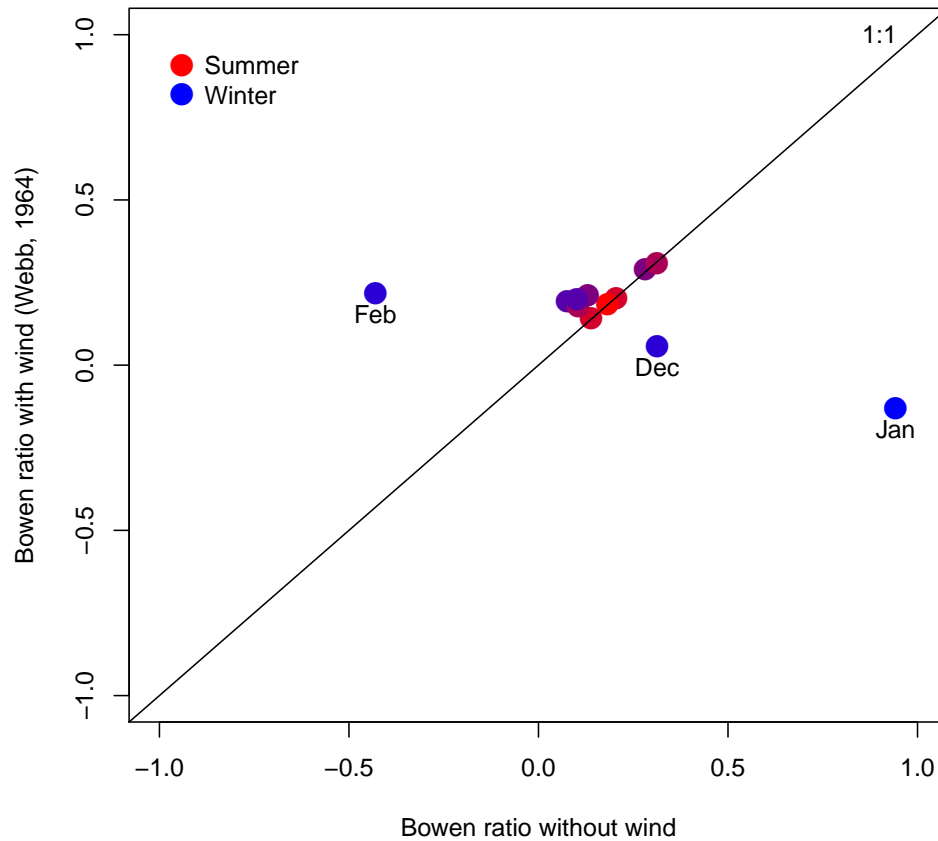


Fig. 1. Comparing Bowen ratio

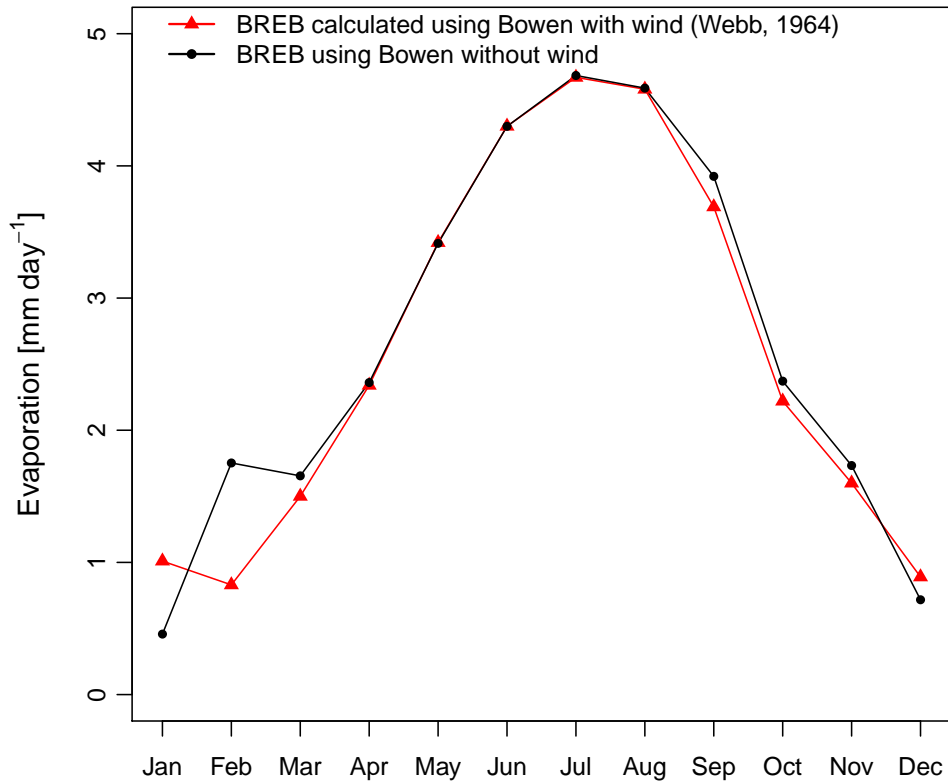


Fig. 2. Comparing evaporation