**Hydrology and
Earth System
Sciences
Discussions**

Interactive comment on "Evaluation of Penman-Monteith model applied to a maize field in the arid area of Northwest China" *by* W.-Z. Zhao et al.

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The manuscript evaluated the performance of Penman-Monteith ïïjĹP-MïïjĽusing N-P (Noilhan and Planton) and J-D (Jacobs and De Bruin) bulk canopy resistance methods in an arid irrigation region by comparing with the observed latent heat fluxes. The description of the experimental set up is sufficiently detailed. The described method and results are of significant interest, e.g. in modeling resistance at canopy level and evapotranspiration modeling, especially for arid regions. This effort would benefit the determination of the key input parameters and quality estimation of the output results of Penman-Monteith model. However, the paper should be improved in some aspects:

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1ïïjŐ Gap-filling procedures were employed in the paper to replace spurious and missing values of eddy covariance technique, but what is the quality control criteria of it? 2ïïjŐ The authors stated that "the N-P is more suitable than the J-D approach to simulate the bulk canopy resistance of the irrigated maize filed under the arid climatic condition", but I found that the difference is little between the results via these two methods (from Fig 5) 3ïïjŐ I wonder whether both the calculating results and the observed ones are validated at the same scale. 4ïïjŐ For the description of irrigation scheme in section 4.3, the paper should be moved into section 3.1 (site description). 5ïïjŐ For Figure 2, 3 and 4, change the units for the y axis to stomatal conductance.

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