

## ***Interactive comment on “Hydrofacies reconstruction of glaciofluvial aquifers and groundwater flow modelling in a densely urbanized area under changing climatic conditions” by Mattia De Caro et al.***

**Anonymous Referee #2**

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This paper presents a comprehensive approach to implement the hydrostratigraphic reconstruction of multi-aquifers and corresponding climate change dependent groundwater flow modeling in Milan Po Plain area of Northern Italy. In my opinion, the topics of this paper might be of interest to the readers of this journal, but it cannot be considered acceptable for publication in its current state.

1. A major concern is that the paper does not appear to be significantly innovative, but consists of a complex exercise that applies varieties of approaches well established in the literature. The novelty of this paper should be reinforced to illustrate the scientific

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and academic findings in the study.

2. Another important concern relates to the groundwater flow modeling. Although the simulation model is generally well calibrated and technically sound, the uncertainty associated with recharge should be considered in simulating future scenarios. As shown in Section 4.2, recharge for different subdomains was obtained by different methods/models and has not been calibrated in the groundwater flow model. Actually, groundwater flow and its level should be mostly dominated by recharge. Then the recharge should be evaluated to proof the value of the modeling work for improving the reliability of groundwater level under changing climatic conditions. To some extent, the change of direct recharge may be more sensitive to the modeling results than the value of indirect precipitation due to climate change described in the paper. So, I strongly recommend authors investigate the sensitivity analysis regarding the fitting parameters of the model and the input values to the model.

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