

Interactive comment on “The spatial variability of snow water equivalent” by T. Skaugen

Anonymous Referee #1

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The paper is intended to consider the spatial variability of snow water equivalent (SWE) in an area in Norway. However, the model proposed by the author describes the process of snow accumulation and melting in a point, while spatial coordinates are not mentioned anywhere in the paper. The passage from the temporal distribution of SWE in a point to the spatial distribution over the area is based on the misinterpreted notion of ergodicity and is unconvincing. As applied to this case, the ergodicity would roughly mean that averaging over the area can be replaced by time-averaging over some trajectory that covers this area well in some sense. Thus, the spatial coordinates are involved in the process of calculations. Anyway, it is clear that the type of correlation within the time series measured in a point is essentially different from the type of spatial correlation within the area; therefore, there can be no method to allow one to derive some spatial regularities from measurements made in a single point. Thus, unfortunately, the author failed to solve the problem posed, and the paper should be

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rejected.

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