

Interactive comment on “Modulation of glacier ablation by tephra coverage from Eyjafjallajökull and Grimsvötn volcanoes, Iceland: an automated field experiment” by Rebecca Möller et al.

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The authors present an observational dataset collected on Vatnojökull ice cap, Iceland. The dataset consists of meteorological and glacier ablation observations under various tephra coverage depths and types. This dataset is useful to calibrate mass and energy balance models to account for tephra coverage, and to understand the impact of tephra thickness on glacier meteorology and ablation. The data are very nicely presented and I don't have any major objections against publication. I only have some minor comments that the authors can consider before publication.

P1, L7: ...three plots of variable thickness (~1.5 mm....

P1, L13: can you quantify 'small'?

P2, L2: ...on parameterisations, where in situ data are...

P3, L2: this might need some more details. How large were the plots? Also, what is the possible impact on the relatively small size of the plots on the measurement errors? There will be always be a certain level of contamination of the true tephra signal because the radiation instruments also see the surrounding snow. Would that be somehow quantifiable?

P4, L31: sums led

P5: perhaps a brief section on the impact on meteorology, mainly the surface energy balance, would be very worthwhile. For instance, what is change in net shortwave radiation? What are the temperature differences? You can simply refer to Figure 3, but mentioning some numbers would be good.

Figure 1b: perhaps good to increase brightness of the picture.

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Discussion paper

