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Supplement of

UAV LiDAR surveys and machine learning improve snow depth and water equivalent estimates in boreal landscapes

Maiju Ylönen et al.

Correspondence to: Maiju Ylönen (maiju.ylonen@oulu.fi)

Table S1. The UAV flight parameters from the field campaigns.

Flight parameters		**Equipment settings**	
Speed	7 m/s	Wavelength	905 nm
Altitude	80 m	Laser pulse repetition rate	240 Hz
Distance between flight lines		Accuracy (50 m nadir)	3 cm
Ground overlap (%)	70 %	Return type	Up to 3 returns
Point density	463.4 points/m² (Sodankylä) 244.18 points/m² (Pallas)		

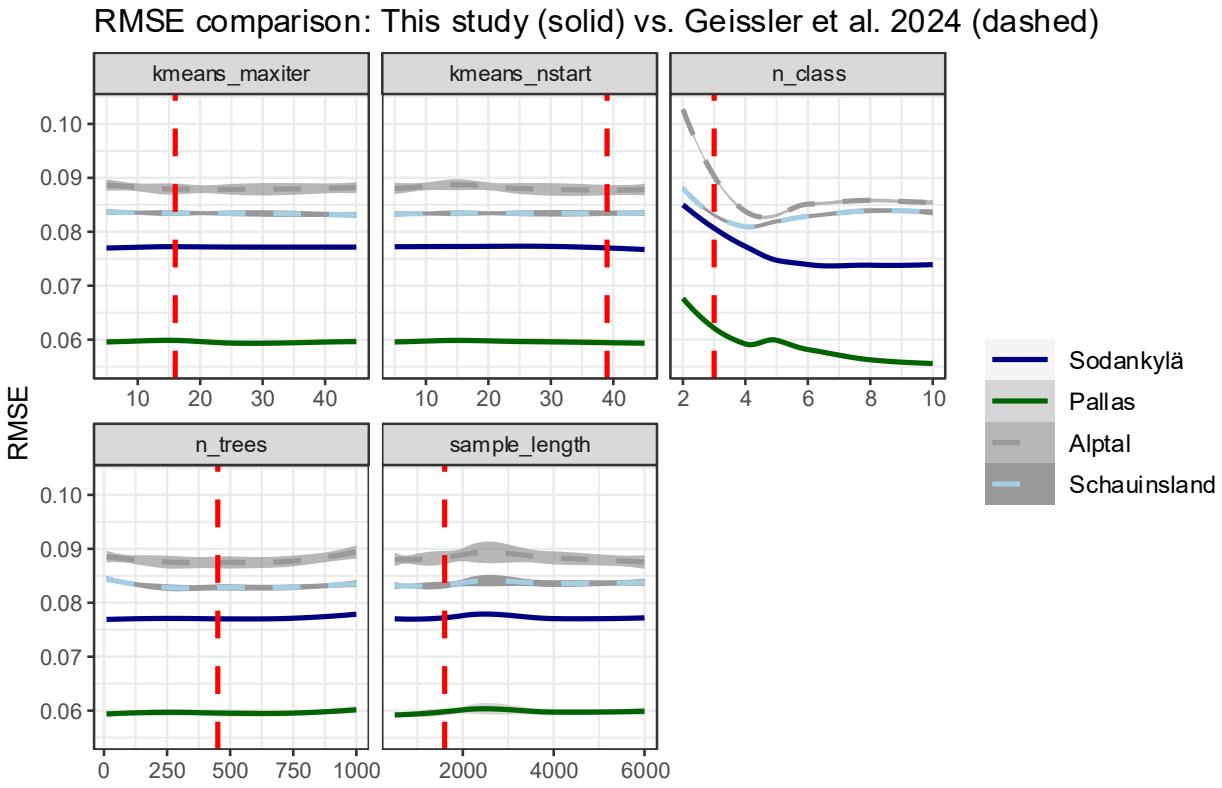

Figure S 1. RMSE of the ClustSnow model parametrizations. Two solid lines represent the sites of this study, Sodankylä and Pallas, and dashed ones are marking the RMSE of previous studies by Geissler et al. (2025).

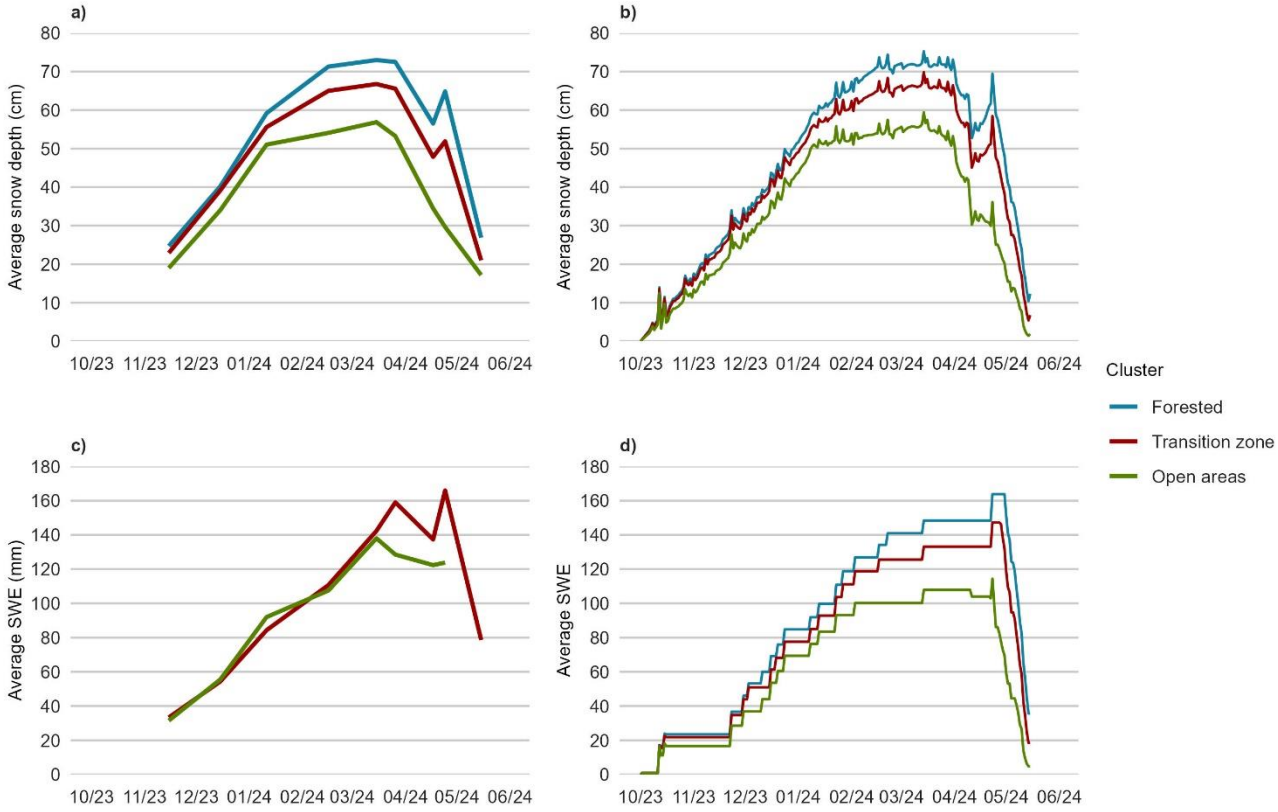

Figure S2. Sodankylä snow course measurements and model outputs for different clusters. Snow depth from snow course (a) and model (b) and SWE from snow course (c) and model (d).

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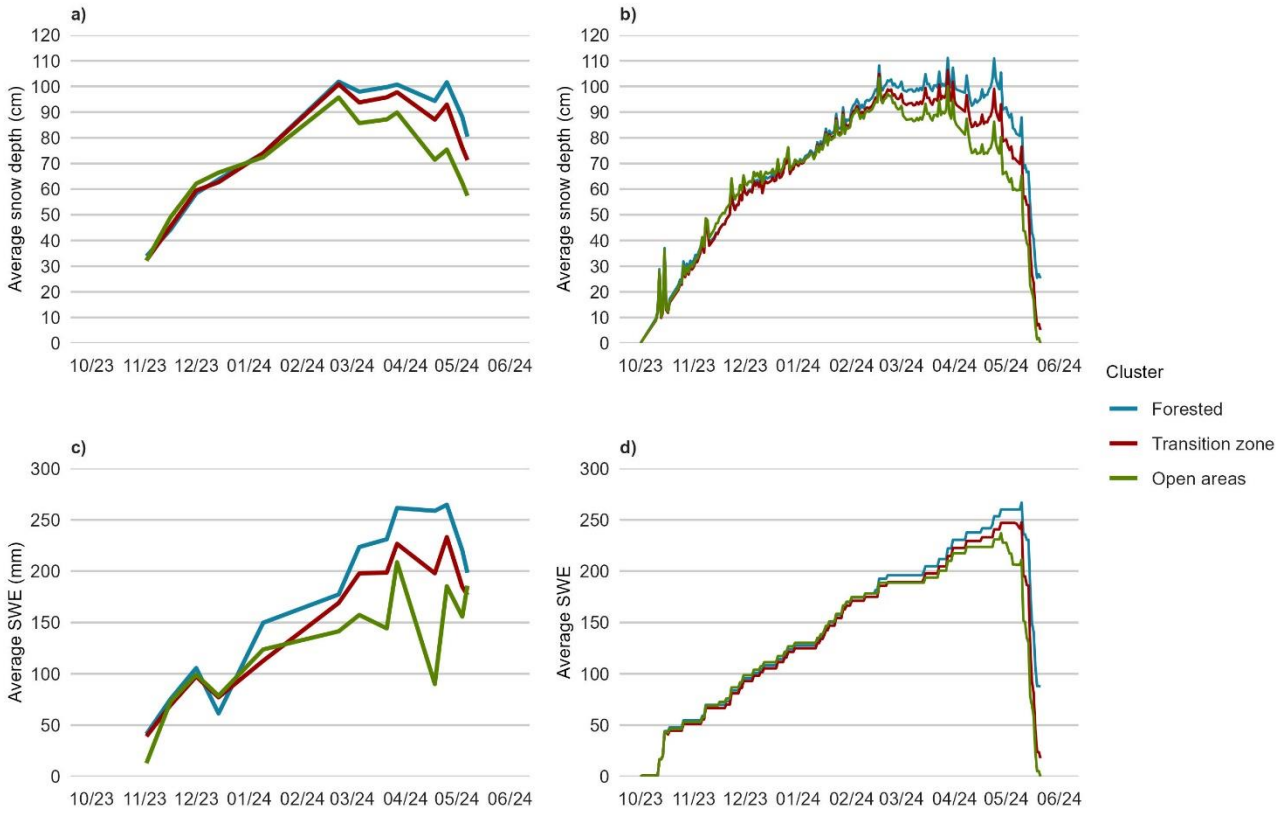
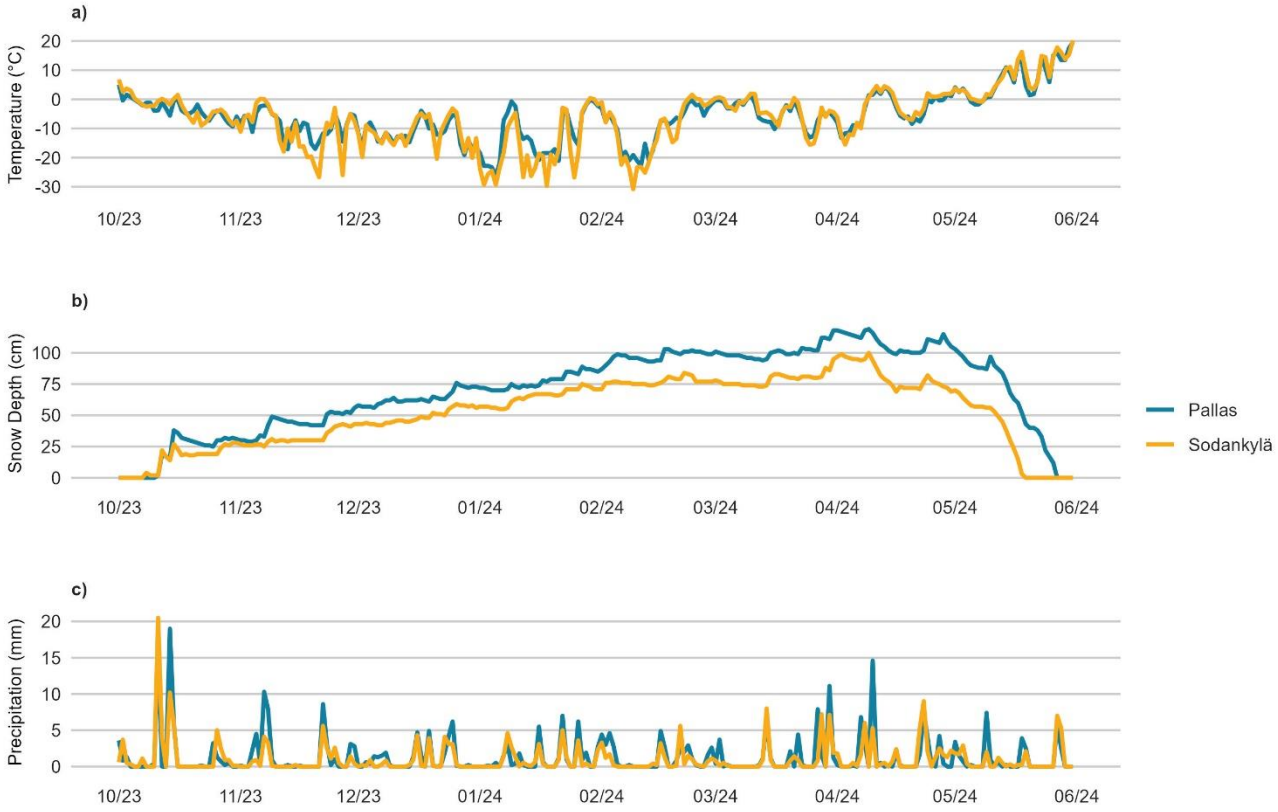


Figure S3. Pallas snow course measurements and model outputs for different clusters. Snow depth from snow course (a) and model (b) and SWE from snow course (c) and model (d).



15 **Figure S4. Daily weather data from both sites during the field season 2023-2024. Upmost average temperature (a), snow depth (b), and precipitation (c). Data: FMI.**