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## Snow as a source of predictability in seasonal forecasts?

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Besides the ocean, the land surface is a crucial component for predictability at (sub-)seasonal time scales. While the prediction of 2m temperature up to several months is possible for some maritime regions, continental regions lack predictive skill. Improved representation of the land surface in seasonal forecasting systems could help to close this gap. Snow cover fraction and snow water equivalent (SWE) are essential properties of the land surface. A snow-covered land surface leads to local temperature decreases in the overlying air (snow-albedo effect and high emissivity) and melting snow cools the surface air and contributes to soil moisture. First, we analyse the dynamical relationships between snow, 2m temperature and sensible/latent heat fluxes in reanalysis data in the northern hemisphere. Then we investigate whether these relationships are also present in operational seasonal forecast models provided by Copernicus Climate Change Service (C3S). First results show that the quality of the 2m temperature forecast over continental regions drops sharply after the first forecasted month, whereas anomalies in snow water equivalent can be predicted up to several months. Forecasted anomalies in sensible and latent heat fluxes of continental land surfaces show predictive skill during winter and spring only locally in some places, which reduces potential interactions between snow/land surface and the atmosphere in the models. The goal of this ongoing work is to assess the importance of snow initialisation and parameterisation for seasonal forecasting.