

# Representation of cloud liquid water in the ECMWF Integrated Forecasting System during MOSAiC

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Supercooled liquid containing clouds are common in the Arctic atmospheric boundary layer and they affect the surface radiative energy budget. Recent studies suggest that the ECMWF Integrated Forecast System (IFS) shows too many cloudy periods in summer and generally misses the periods with clear skies, while in winter the cloudy state is underrepresented. We use ground-based remote sensing data from the MOSAiC campaign to assess systematic errors in modelled liquid cloud water over the whole MOSAiC period and combine this with more detailed analyses of selected cases. In addition, we perform sensitivity tests to identify ways to improve the parametrization for Arctic mixed-phase clouds in the IFS.

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