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Observations and simulations of a severe atmospheric icing event

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A severe atmospheric icing event in W-Iceland is studied. The event is simulated with the MM5 atmospheric model and a synthesis of the simulations and all available observations, including severe icing on an aircraft are presented. The event occurs where a frontal system interacts with about 600 m high mountains. The supercooled liquid water and strong updrafts are well reproduced by the model. The sensitivity of the icing conditions to the shape of the topography is explored and mountain ranges both upstream as well as downstream appear to contribute to the icing. The sensitivity of the reproduction of the icing to horizontal resolution of the model is explored. The study gives strong indications that similar events could be reproduced numerically in real time for forecasting purposes.