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Heat and energy fluxes in the convective cell behind a cold front

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Abstract. High resolution model simulations are used to estimate heat fluxes and energy conversion in the convective cell developing behind a cold front. It is found that the model is able to simulate rapid temperature changes in the low troposphere up to 1 °C for a time period of a few minutes due to latent heat release as well as horizontal acceleration up to 5 m/s at the top of convective circulation. Numerical experiments have also shown sensitivity of fine resolution simulations to parameterizations used for the description of a large-scale flow.

Full Article in PDF (PDF, 2670 KB)

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