

Weather Clim. Dynam. Discuss., author comment AC1  
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## Reply on CC1

Deborah Morgenstern et al.

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Author comment on "Differentiating lightning in winter and summer with characteristics of the wind field and mass field" by Deborah Morgenstern et al., Weather Clim. Dynam. Discuss., <https://doi.org/10.5194/wcd-2021-68-AC1>, 2021

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The selection of the 35 ERA5 variables was done subjectively based on our own meteorological expertise and results in the literature. We chose atmospheric variables that contribute to the formation and ultimately to the separation of electric charges needed for lightning to occur. This requires variables from all five categories (wind field, mass field, cloud physics, moisture field and surface exchange processes). Within these categories we chose variables that concisely and comprehensively describe the lightning-relevant aspects. The variables are either directly available in the ERA5 data set or derived from them. We will include this information in the paper.