**Author's Response Final**

Dear Christian Grams,
Dear reviewers,

thank you very much for all the feedback and the acceptance.
Please find below the comments to the second round of reviews again as in the previous upload.

Thank you very much,
Fiona Fix-Hewitt and Co-Authors


We addressed all issues:
1. We double checked the data in Fig. 4 and rephrased the sentence in question:
> "The 90th percentile of streak length varies strongly across the seasons (Fig. 4, bottom row). In most seasons, the 90th percentile of the streak length is well below a week, but reaches a week in the south-western Mediterranean in SON. During JJA, however, 90th percentile streak lengths of more than a week for most of the Mediterranean Sea (even exceeding nine days in some cells, not shown) are reached in the Mediterranean, maxima are even up to four weeks." (l 275 ff.)

2. We inserted the sentence:
> "Also atmospheric rivers can carry dust, as they have been described to pick up dust in the Saharan boundary layer while travelling from the Atlantic towards the continent (Dezfuli et al., 2021; Francis et al.,2022). Hence, it is possible for an atmospheric river to also be an AD, which is not a contradiction but simply reflects the different definitions of the two terms." (l. 446ff)

3. We mention the dusty-cirrus topic:
> "Dusty cirrus clouds can occur when Saharan dust ascends into the upper troposphere (as it can with warm conveyor belts, or the ascending air stream of an AD; Fromm et al., 2016; Seifert et al., 2023; Hermes et al., 2024), forming dust-infused baroclinic storms with characteristic cirrus decks over Europe. These dust events can modify shortwave and longwave radiation fluxes and cloudiness through direct, indirect, and semi-direct dust effects (Helmert et al., 2007) and hence additionally change the vertical temperature profile. Forecasting the cloud and radiative effects of dust events poses a challenge to numerical weather prediction models, which often do not include dust prognostically, and also lack proper parametrisation of dust-cloud-radiation interactions (Hermes et al., 2024; Seifert et al., 2023). Including prognostic dust and a proper parametrisation to describe dusty cirrus effects has been shown to improve forecasts of clouds and radiative fluxes considerably (Hermes et al., 2024; Seifert et al., 2023). This highlights the relevance of AD-linked dust events, especially for cloud and radiation forecasts, which are especially important to the renewable energy sector. All the above mentioned consequences of ADs remain to be investigated in detail." (l. 433 ff.)