Atmospheric rivers and their associated extreme rainfall over Morocco

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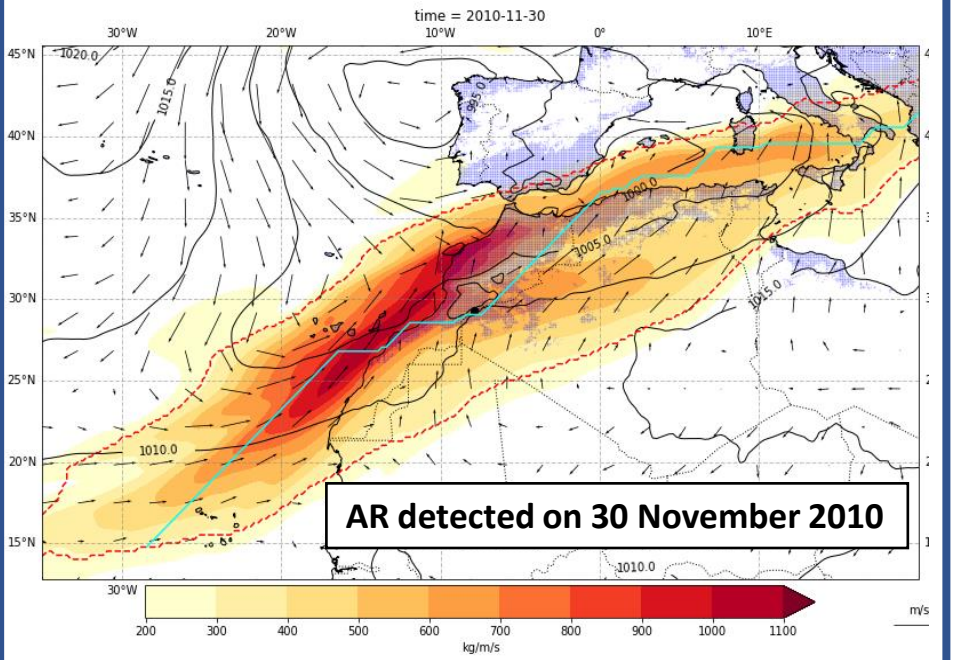
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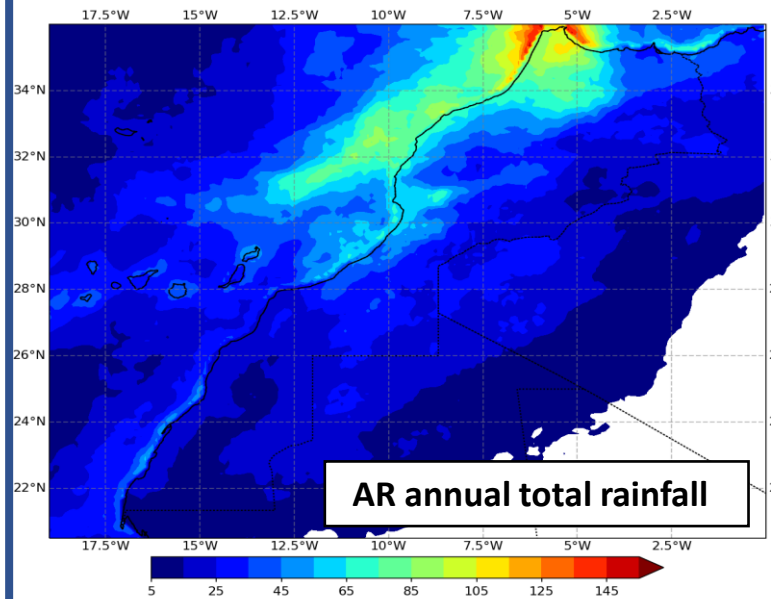
4 Direction Générale de la Météorologie, Morocco

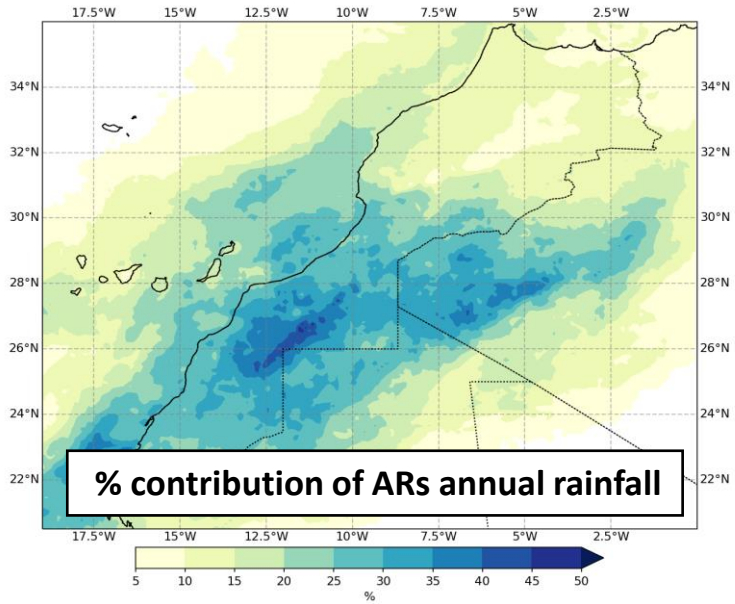
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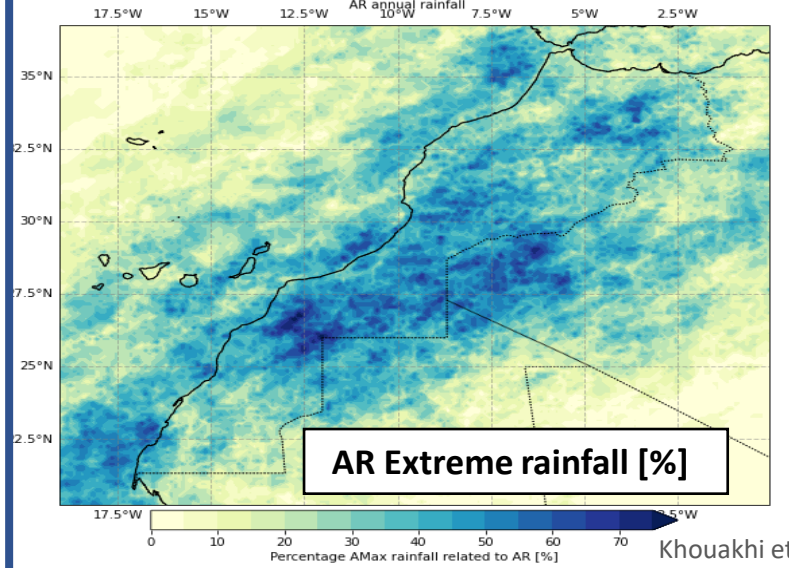


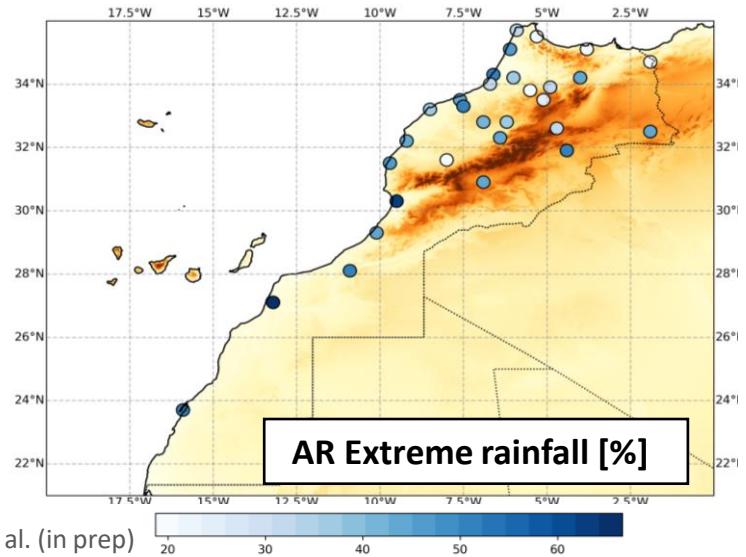


Heavy rainfall of 29 and 30 November 2010 was associated with an atmospheric river (AR).

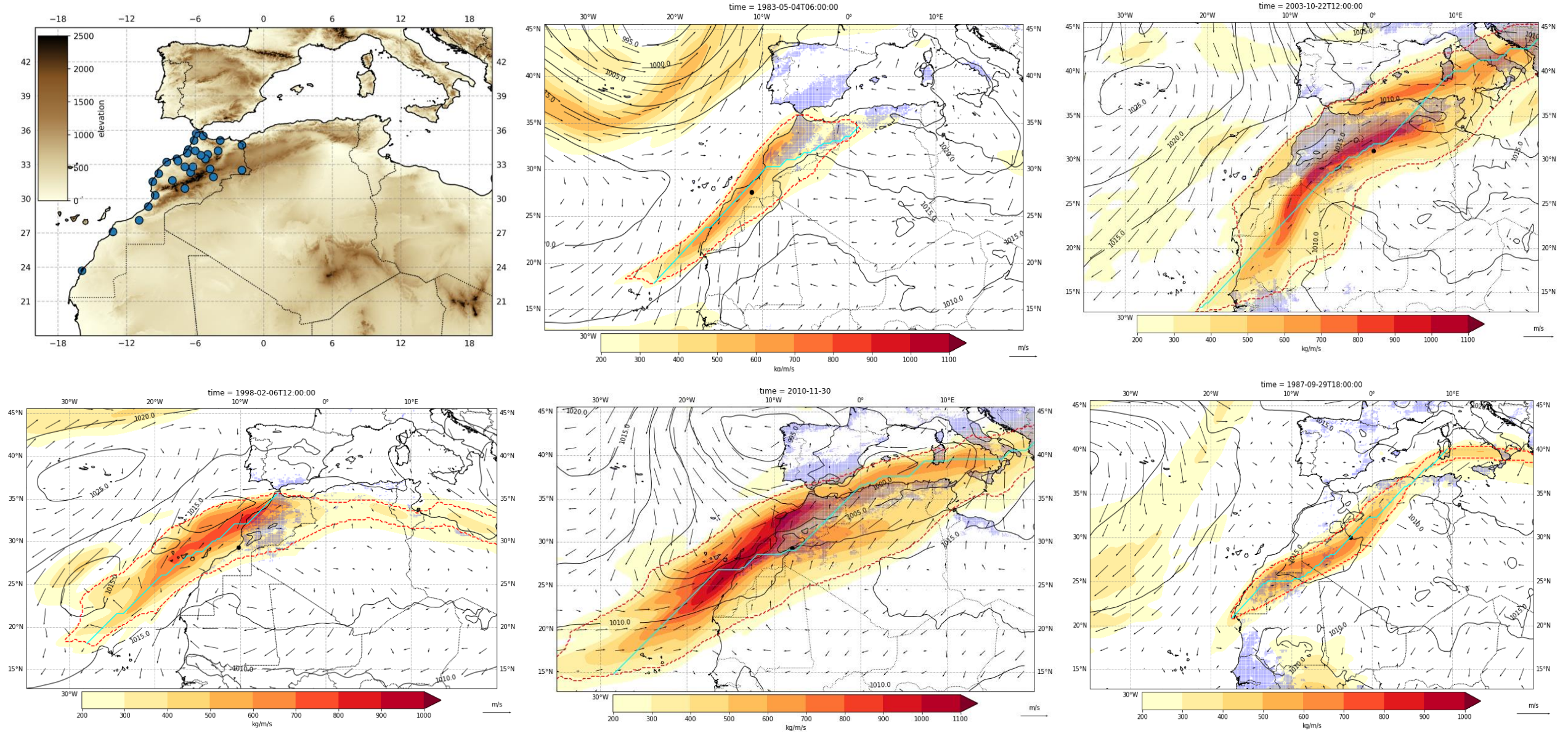






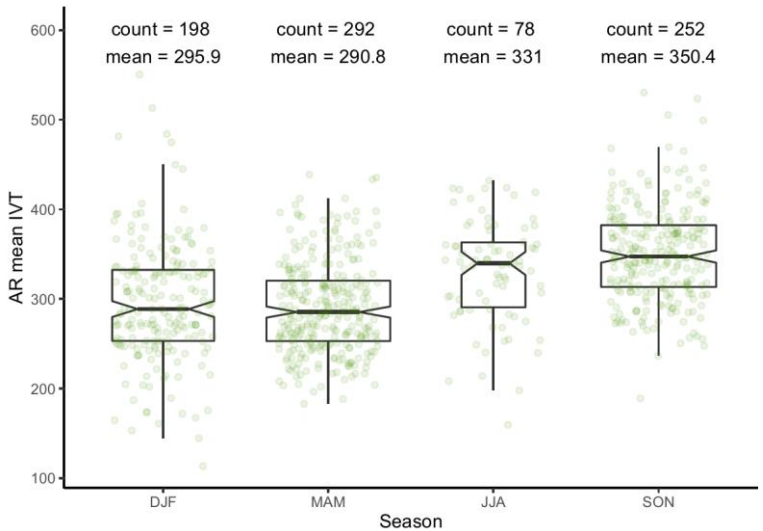


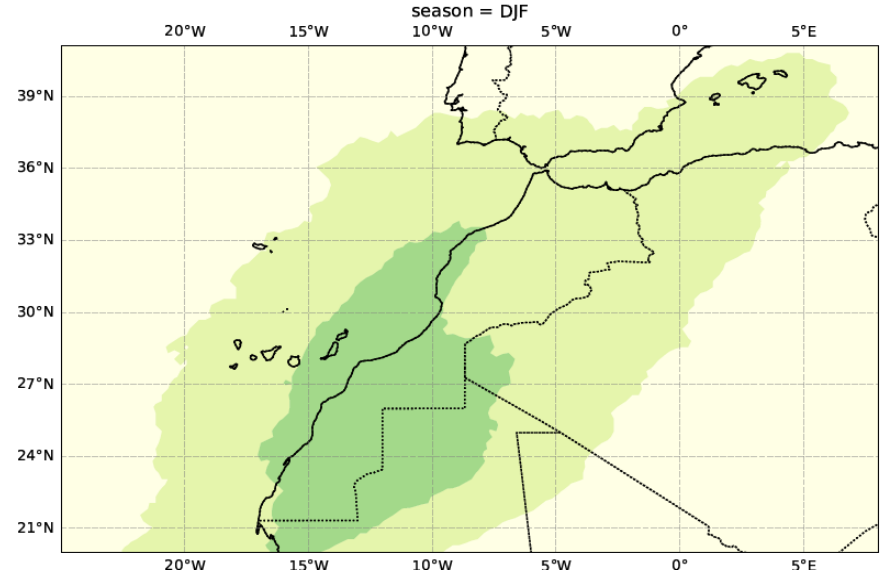
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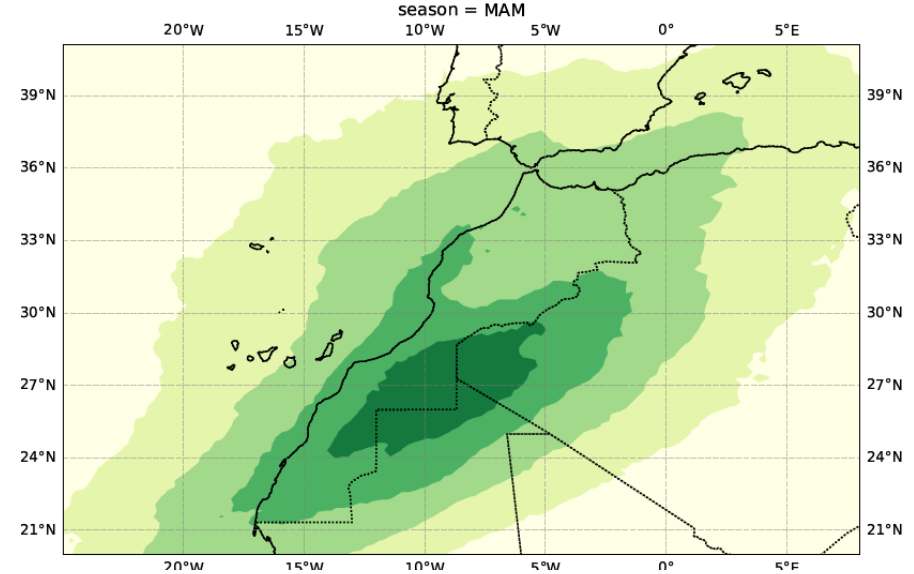


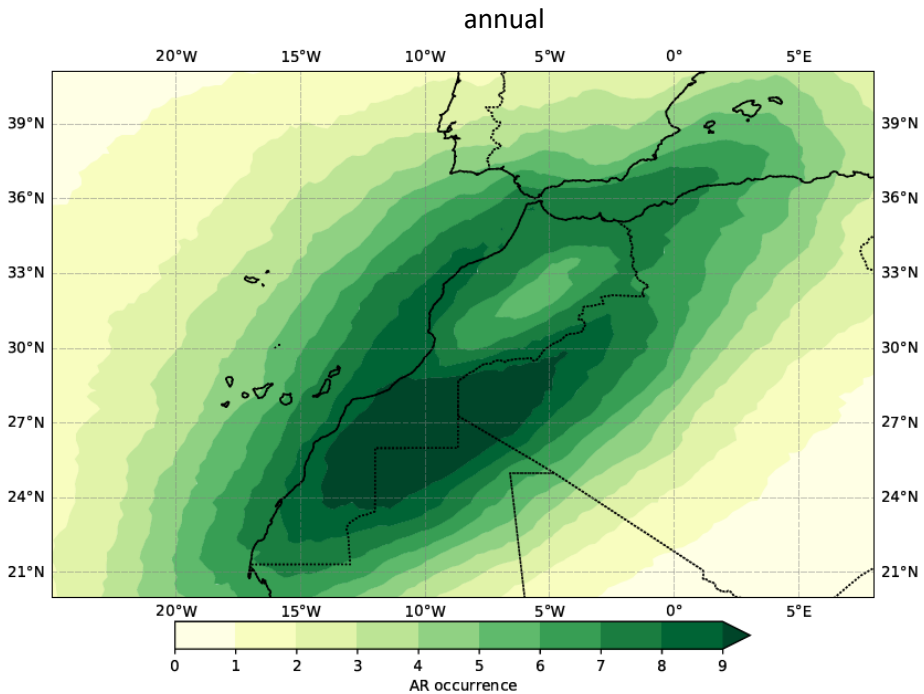
Top left; elevation map of Morocco with rain gauge locations used in the analysis. The rest of the maps illustrate ARs detected over different parts of Morocco. Red dashed line indicates AR region. AR axis and centroid are shown with the cyan line and the black dot respectively. Blue shade in the background indicates rainfall accumulation exceeding 10 mm of the concurrent and the following day of the AR occurrence date.

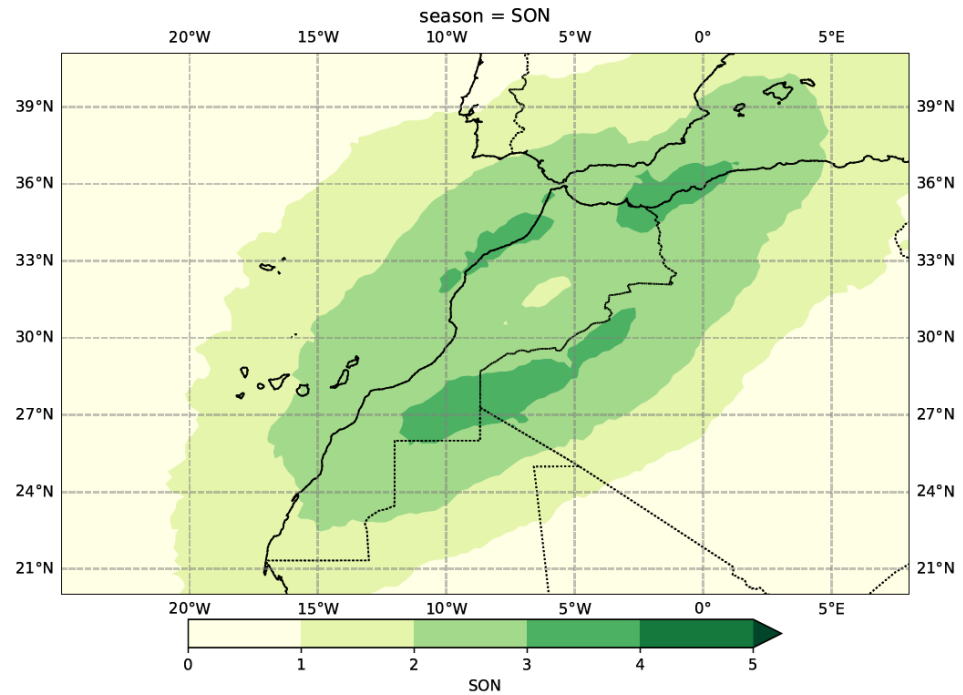
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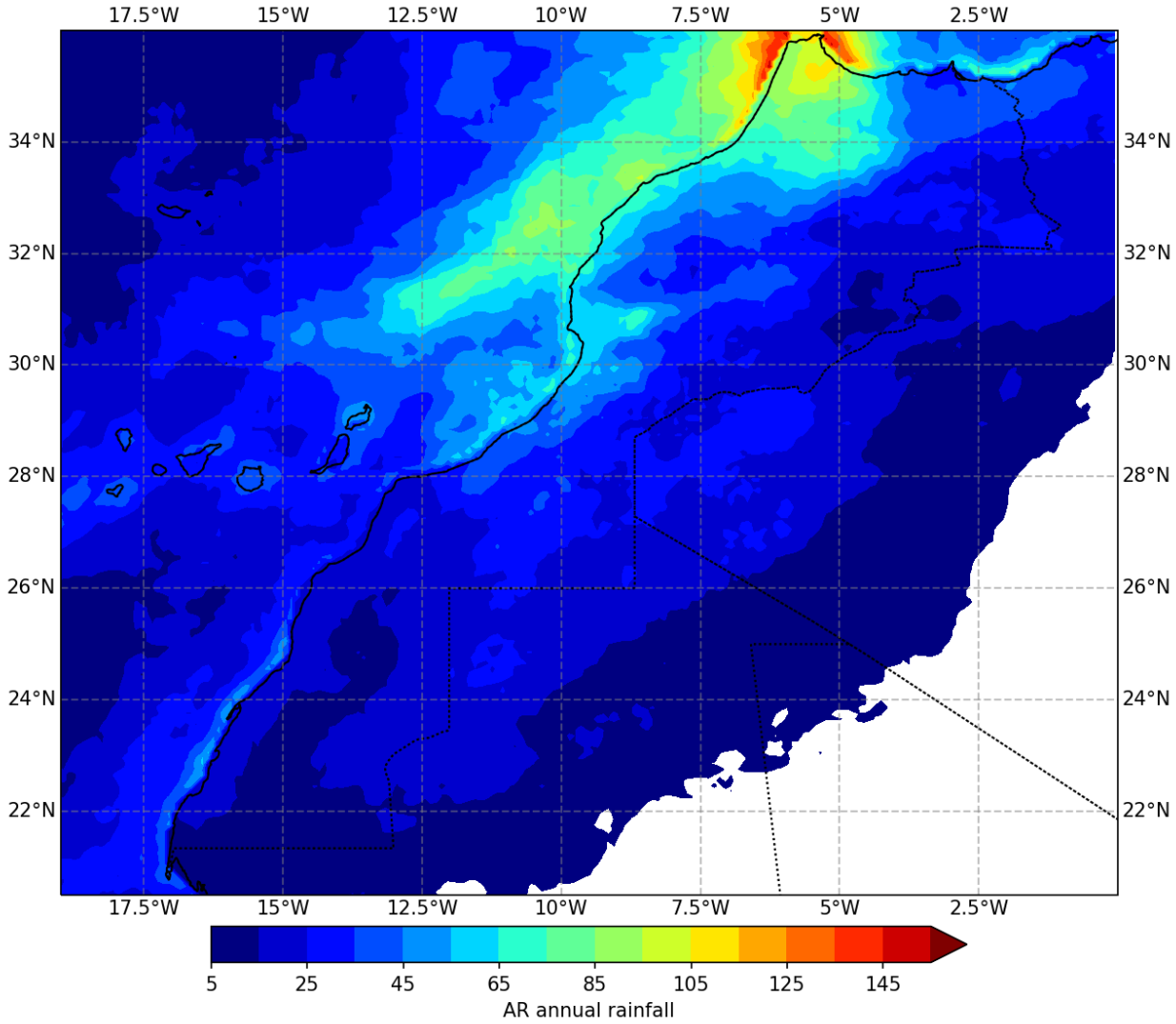


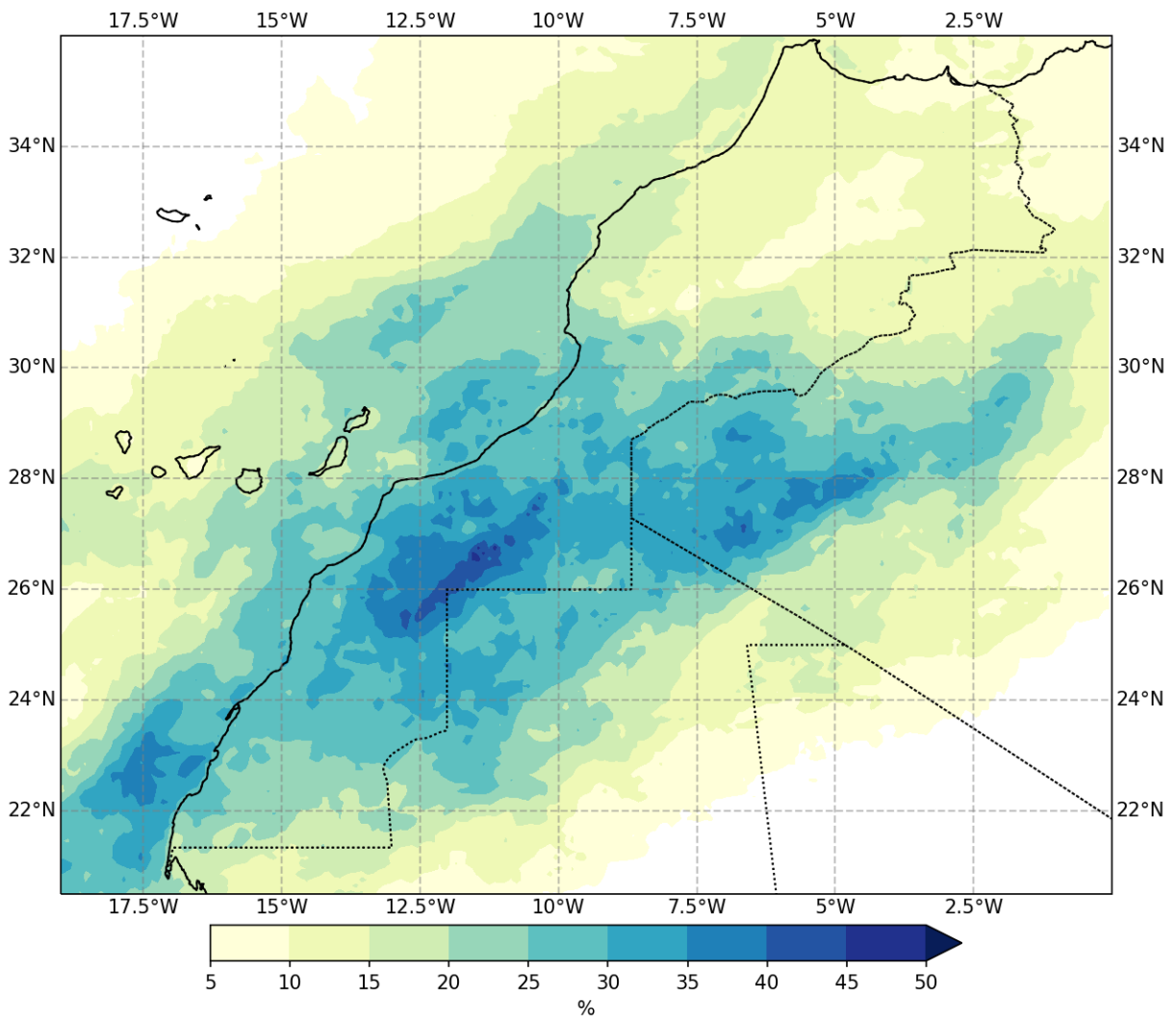




Top left: Seasonal distribution of the mean IVT of the detected AR regions over Morocco. Maps indicate the annual (left) and seasonal (right) daily AR frequency.

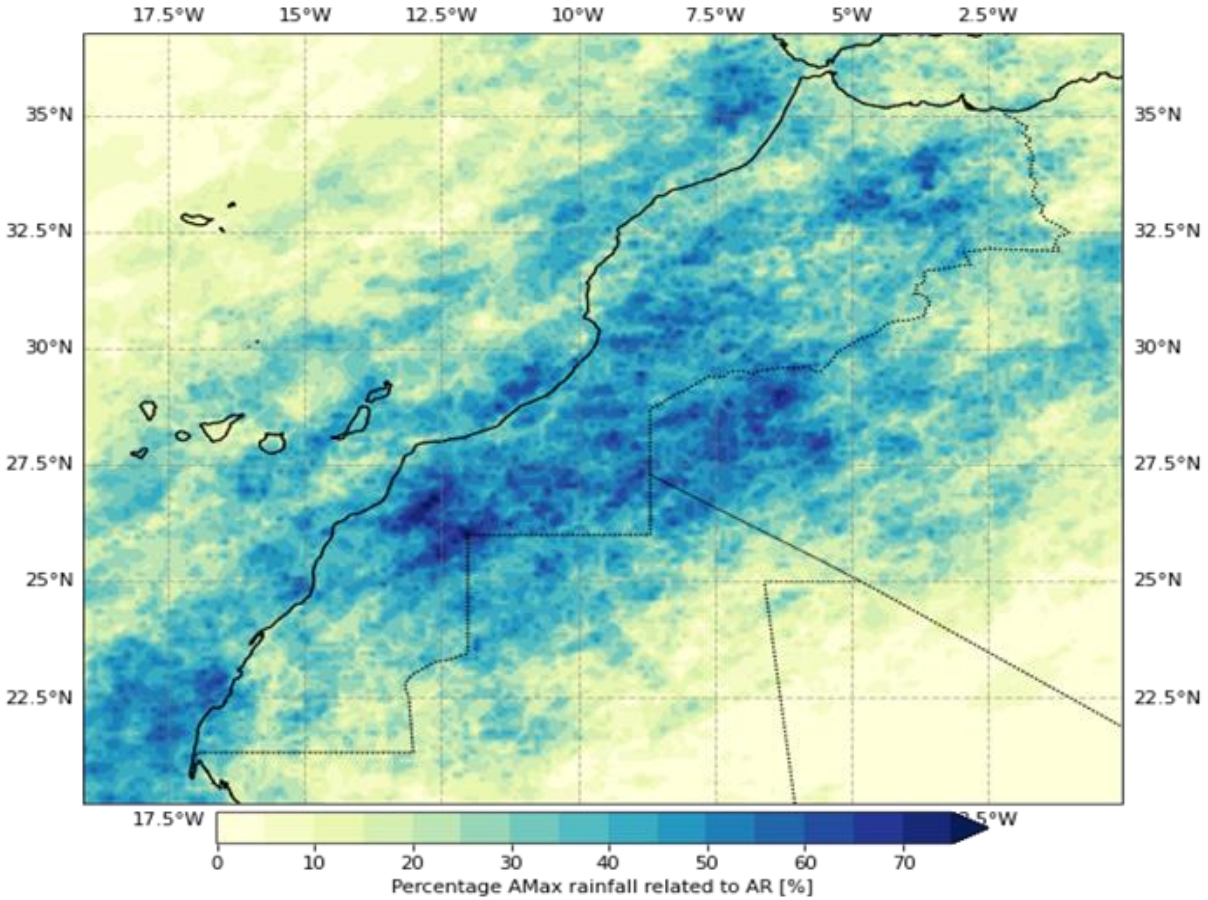
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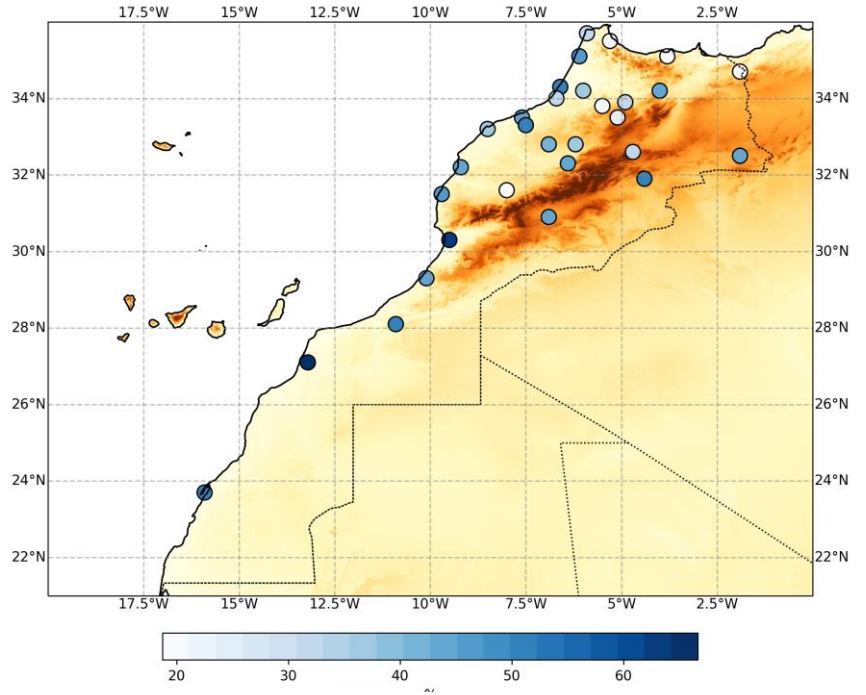


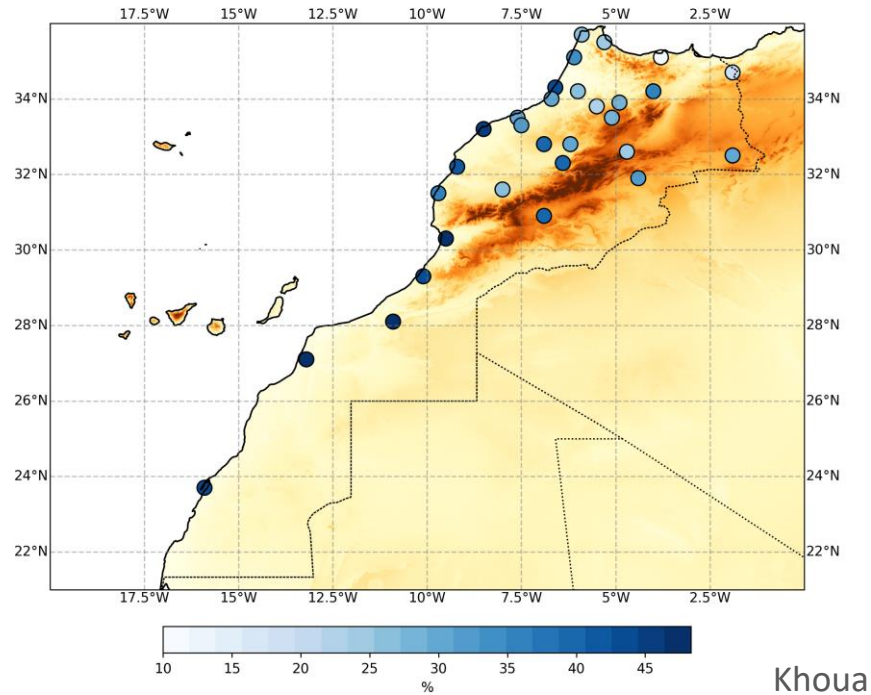


Total AR annual rainfall (left) and proportion of annual rainfall from ARs (right) from 2000 – 2019 using IMERG rainfall.

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Contribution of ARs to the annual maximum rainfall using

- **IMERG gridded rainfall, 2000 – 2019 (left panel)**
- **rain gauges, 1979 – 2016 (right panel).**

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Extreme weather associated with atmospheric rivers over Morocco

Khouakhi, Abdou; Driouech, Fatima; Slater, Louise J.; Waine, Toby W.; Chafki, Omar ...

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