

EGU 2022

Solar Wind Structures and their Effects on the High-Energy Tail of the Precipitating Energetic Electron Spectrum

Josephine Salice, Hilde Nesse Tyssøy, Christine Smith-Johnsen, and Eldho Midhun Babu

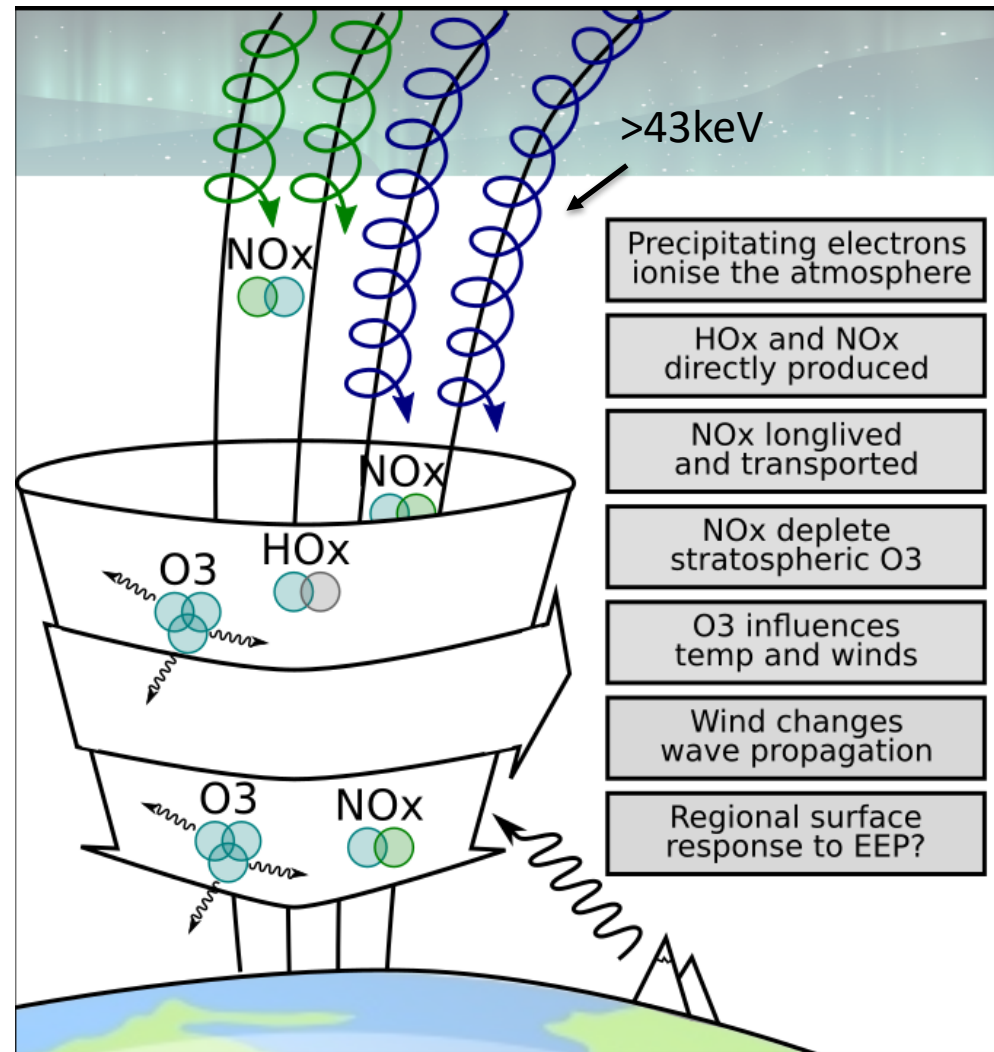
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Motivation

MEE precipitation

- **E1:** >43keV electrons
- **E3:** >292keV electrons



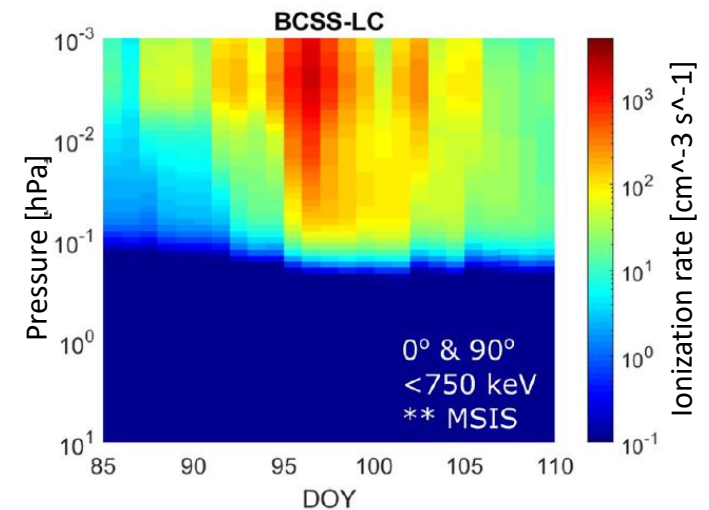
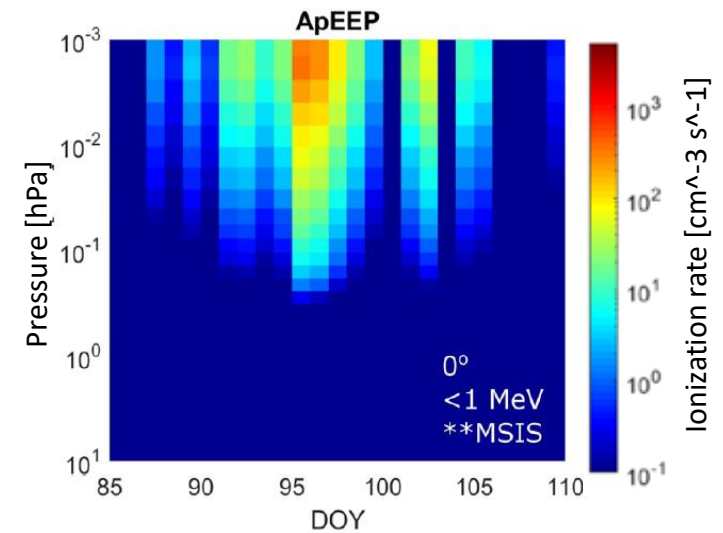
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- **E1:** >43keV electrons
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Parameterization is hard

- Flux level
- Duration



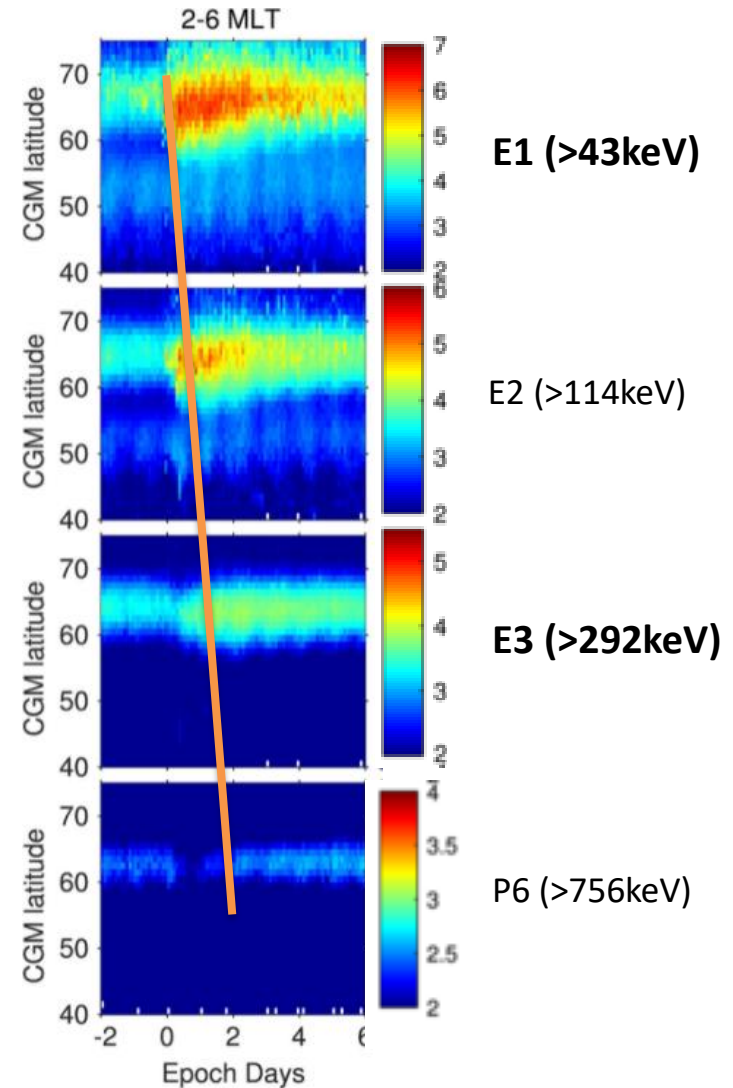
Motivation

MEE precipitation

- **E1:** >43keV electrons
- **E3:** >292keV electrons

Parameterization is hard

- Flux level
- Duration
- **Delay**



Motivation

MEE precipitation

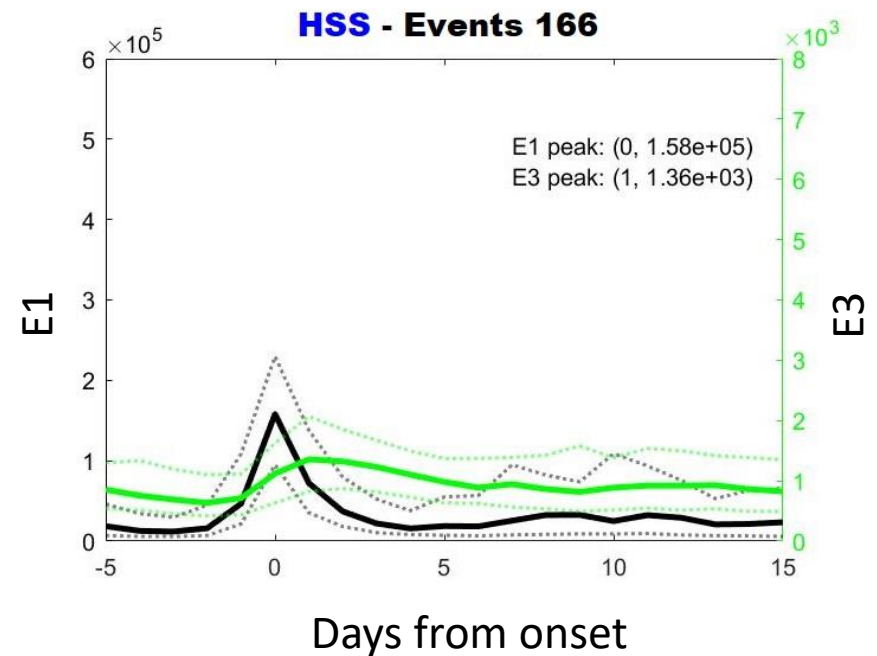
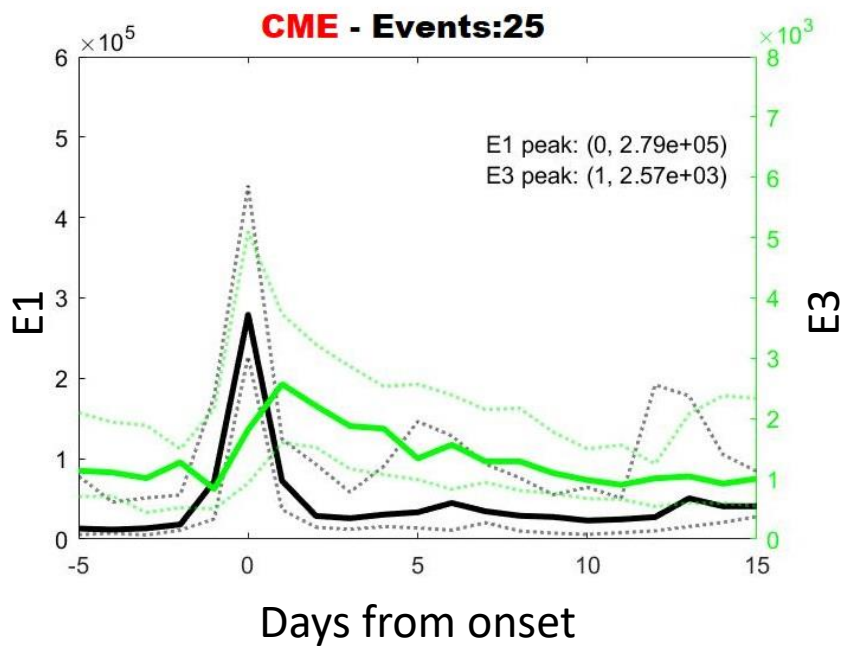
- **E1:** >43keV electrons
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Goal: Identify parameters that can add to the accuracy of MEE parameterization to be applied in a chemistry-climate model.

Method

Explore features of **E3** (>292keV) in the context of **E1** (>43keV) and solar wind properties

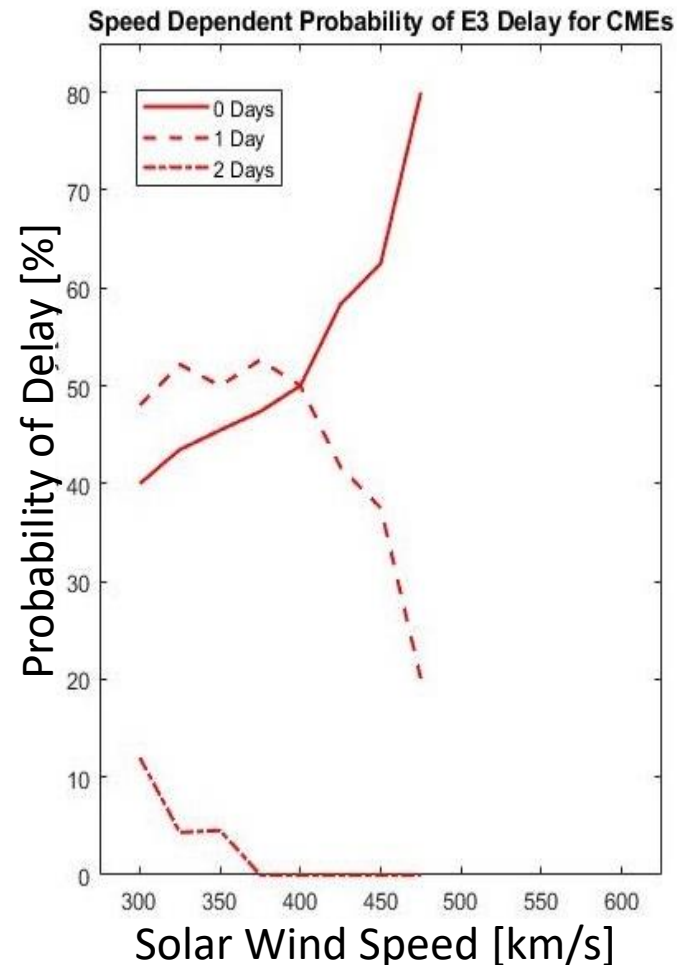
- Structure
- Speed
- IMF Bz



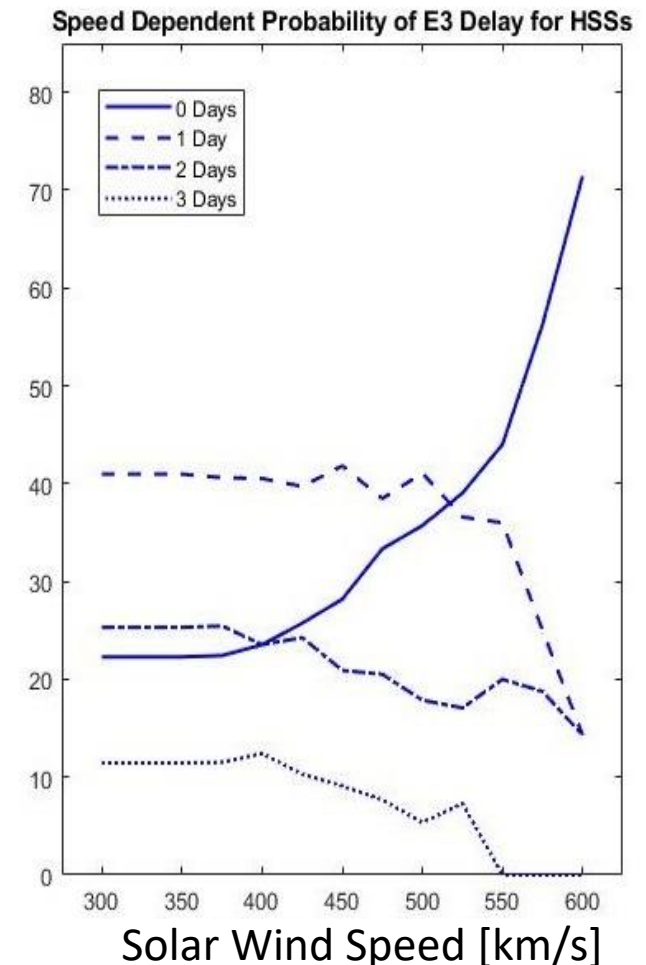
Key finding 1

- Solar wind speed can be applied to determine the delay of E3

CME



HSS



Thank you 😊

References

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- Seppälä, A., et al. (2014), What is the solar influence on climate? overview of activity during causes-||, *Progress in Earth and Planetary Science*, 1, doi:10.1186/s40645-014-0024-3