

Sulphur dioxide as an indicative of Arctic Haze events

Do models resolve the Arctic
haze events?

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Group 1

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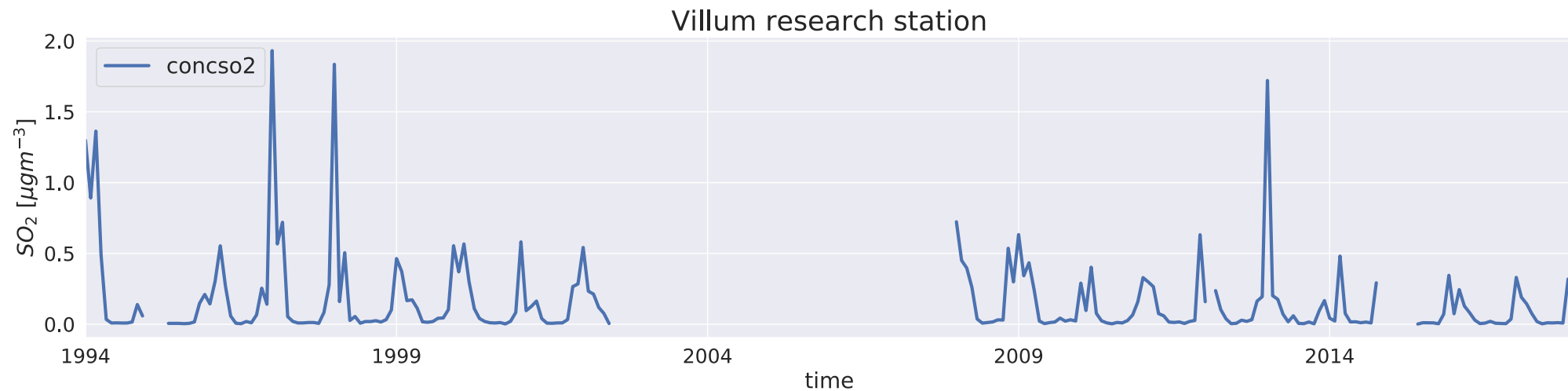
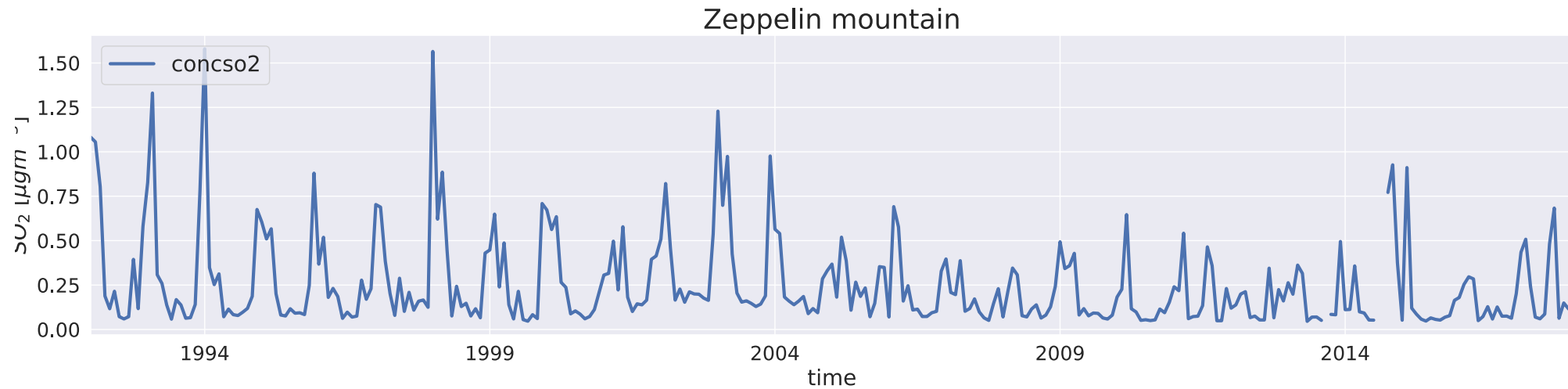


Arctic haze events:

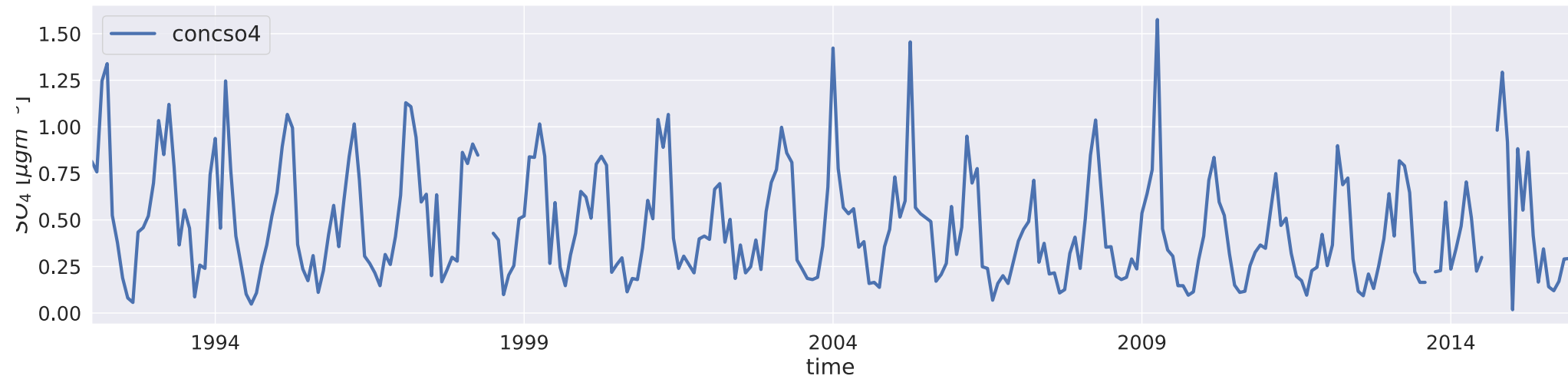
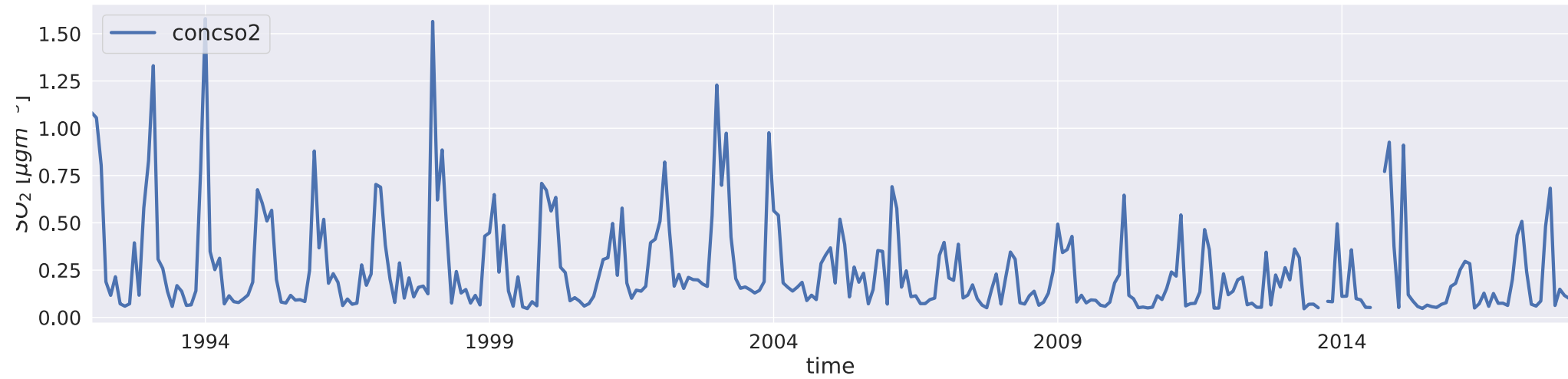
- Haze events in the Arctic due to anthropogenic sources of:
 - Sulfate
 - Particulate organic matter
 - To a lesser extent: ammonium, nitrate, dust and black carbon

(source: *Arctic haze In: AMAP Assessment 2016: Acidifying Pollutants, Arctic Haze, and Acidification in the Arctic*)

Stations: Zeppelin mountain and Villum research station



Measurements of SO_4^{2-} and SO_2 at Zeppelin



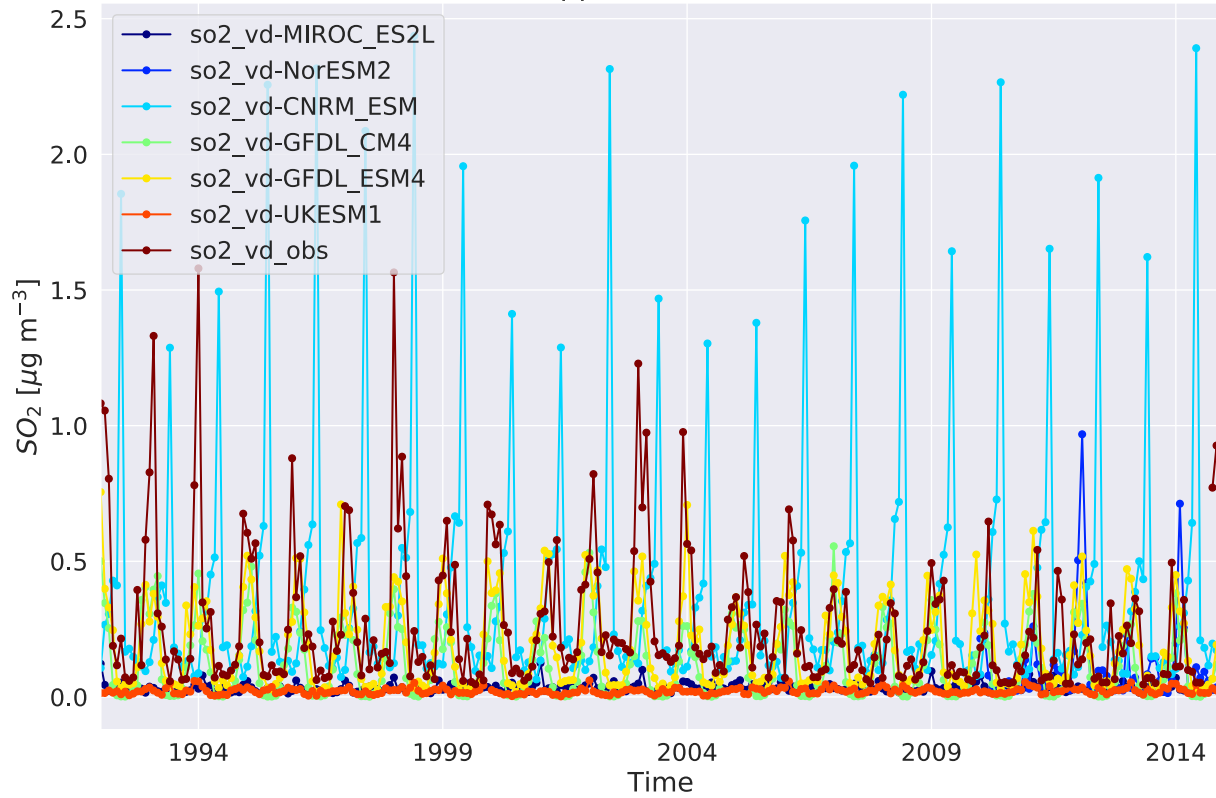
Comparison with historical model runs

- UKESM1-0-LL
- CRNM-ESM2-1
- GFDL-CM4
- GFDL-ESM4
- MIROC-ESL2
- NorESM2-LM

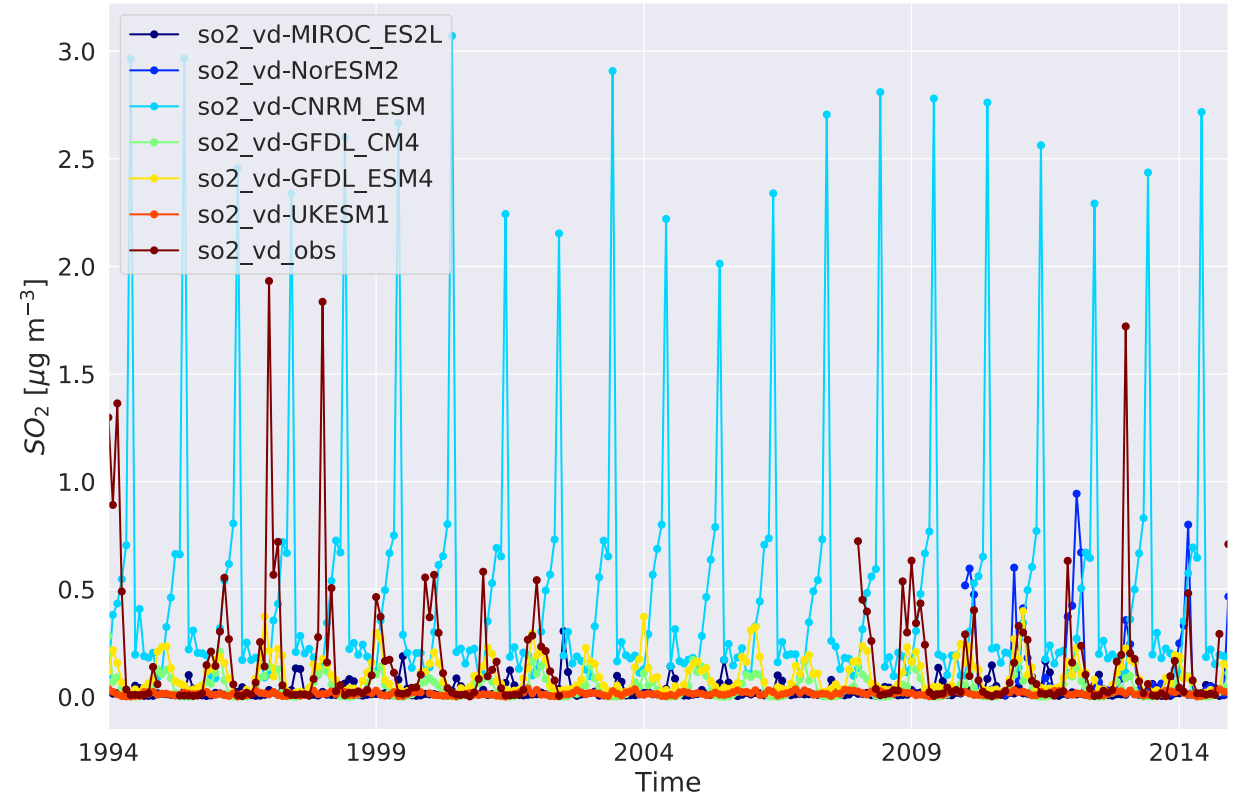
Timeperiod:

- Zeppelin: 1992 – 2014
- Villum: 1994 - 2014

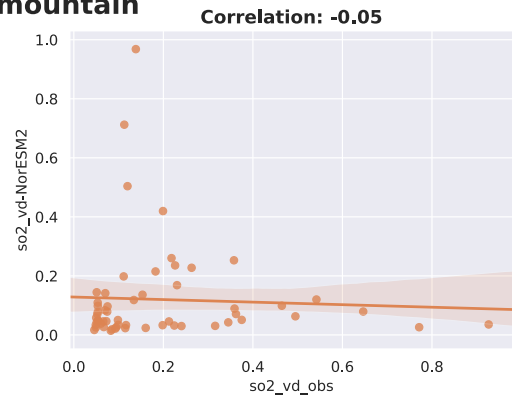
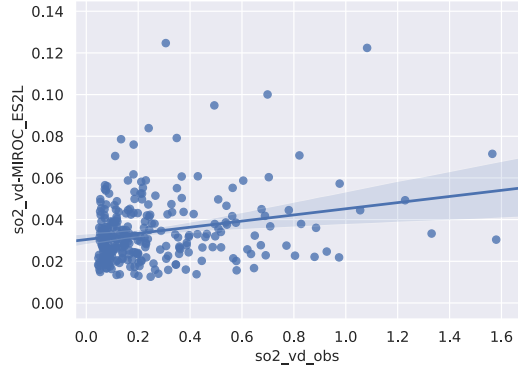
Zeppelin mountain



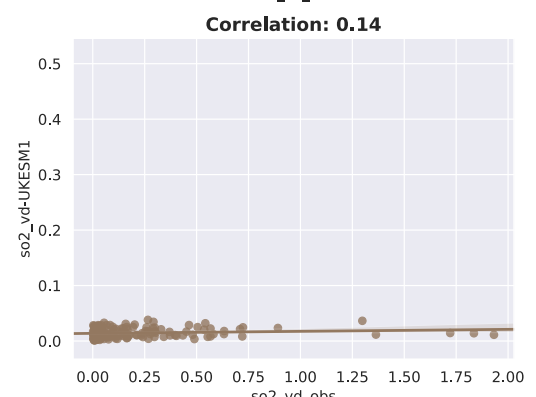
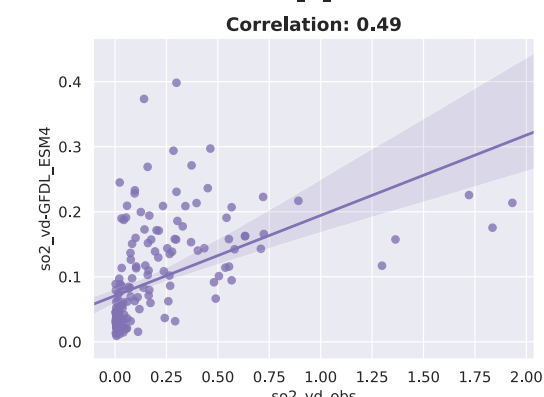
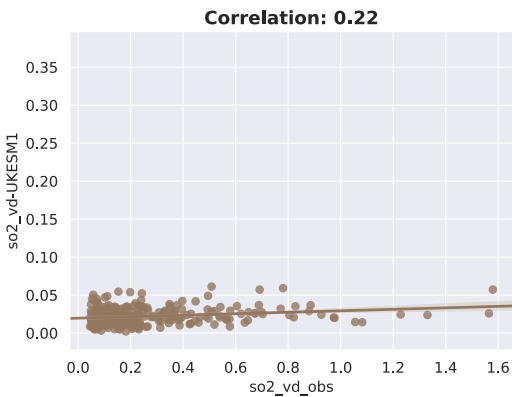
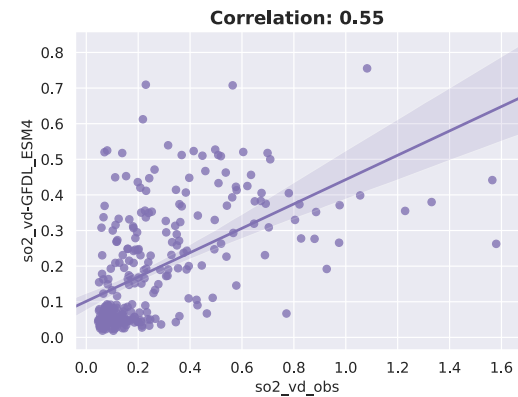
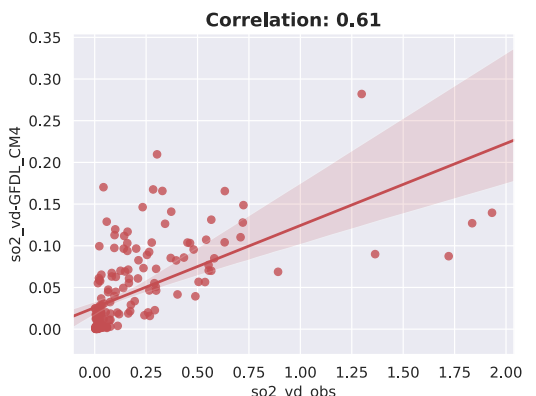
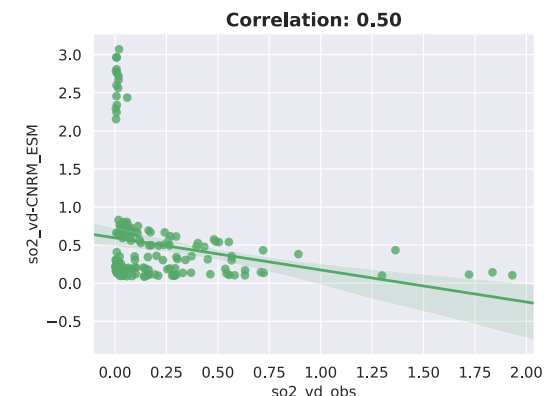
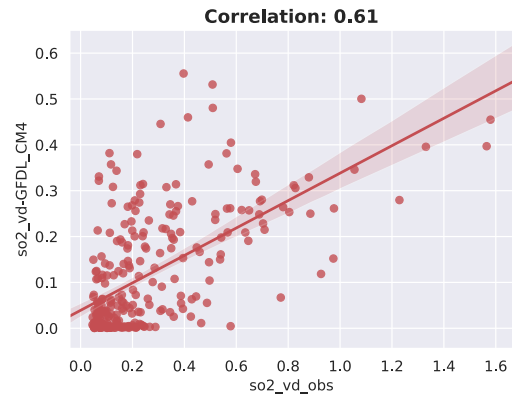
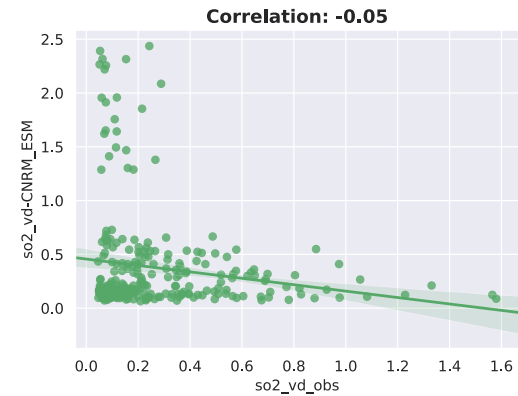
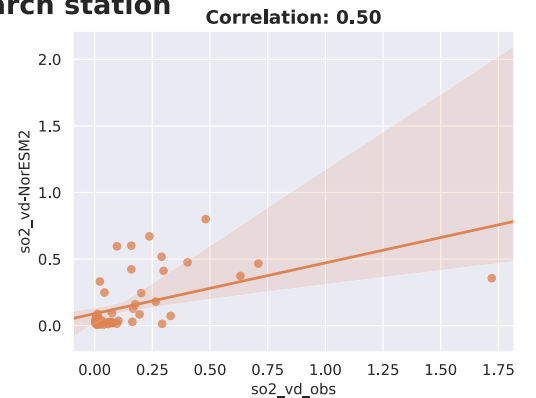
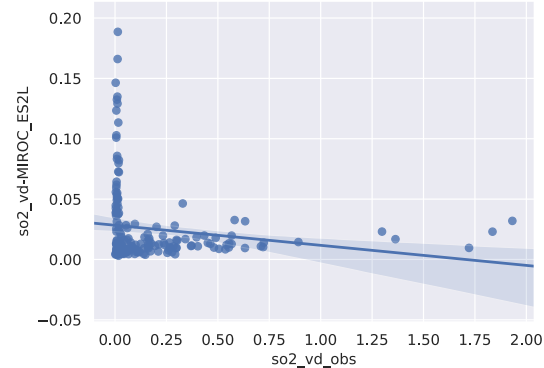
Villum research station



Zeppelin mountain



Villum research station



Future work:

- Find a representative value of arctic haze events based on theory
- Find out what biases causes the discrepancy between models and observations