

SCIAMACHY OCIO nadir SCDs

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Special conditions of OClO validation

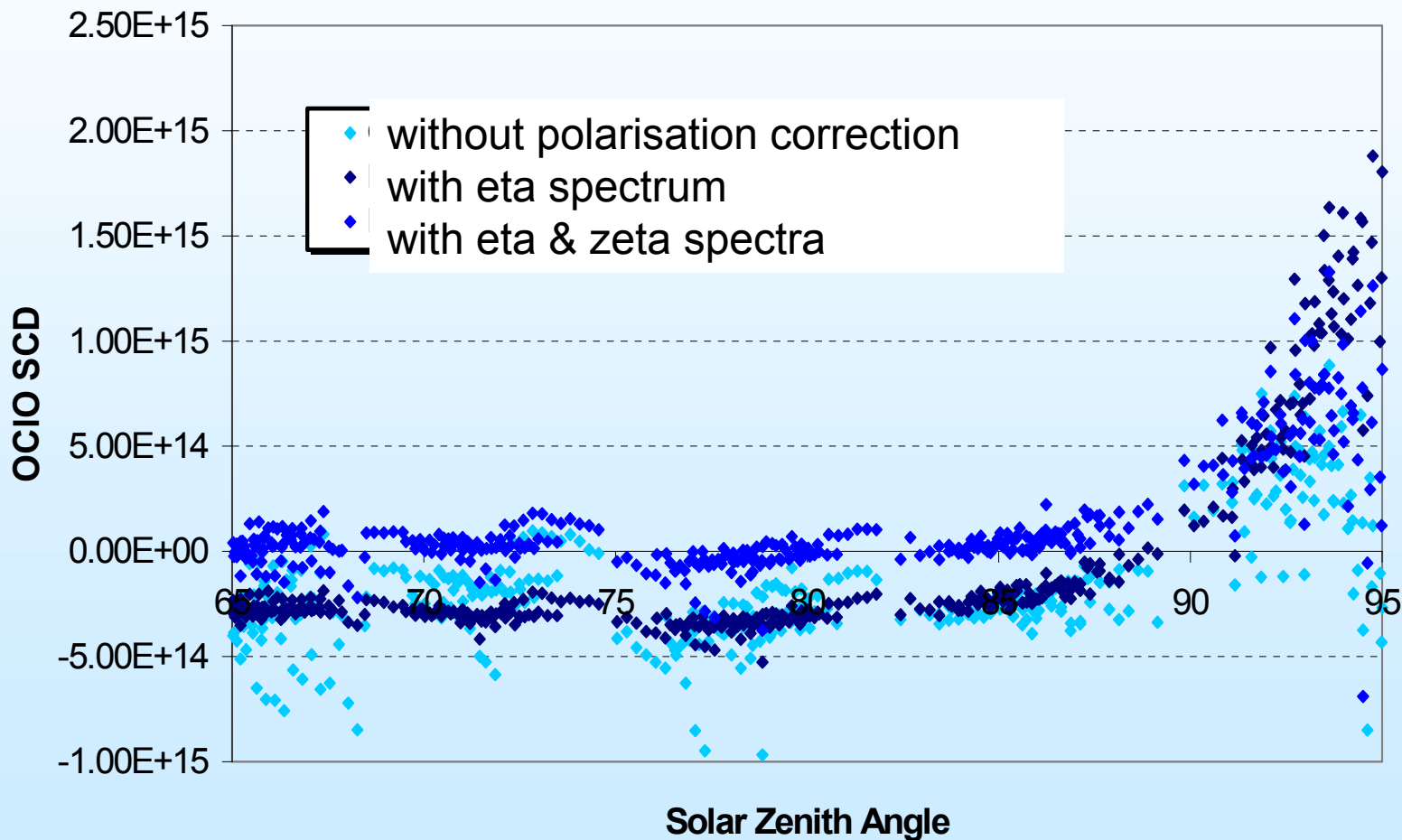
- Measurements are very sensitive with respect to:
 - Differences in time
 - Differences in location
 - Differences in viewing geometry
 - Gradients along the line of sight
- Thus a validation with independent observations is difficult

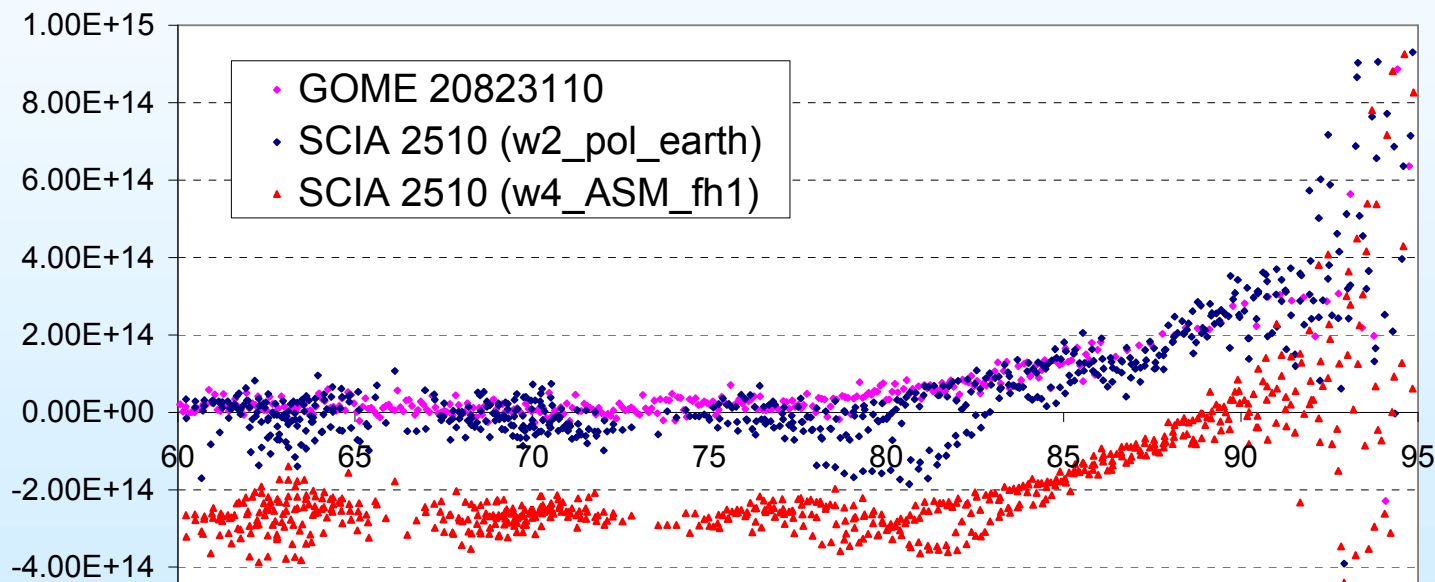
- So far:
 - Comparison with GOME
 - Interpretation with respect to atmospheric conditions

Please also note:

- GOME OCIO SCDs so far not available as individual operational product (but as By-product of SCIA-BrO)
- Here Scientific SCIA products are used (Uni-Heidelberg and Uni-Bremen)
- These products have some specialities:
 - Use of Earth or Sun reference spectra
 - Use of polarisations spectra (Heidelberg & Bremen)
 - Use of additional correction spectra (Bremen)

Influence of polarisation correction (including polarisation spectra in fit)

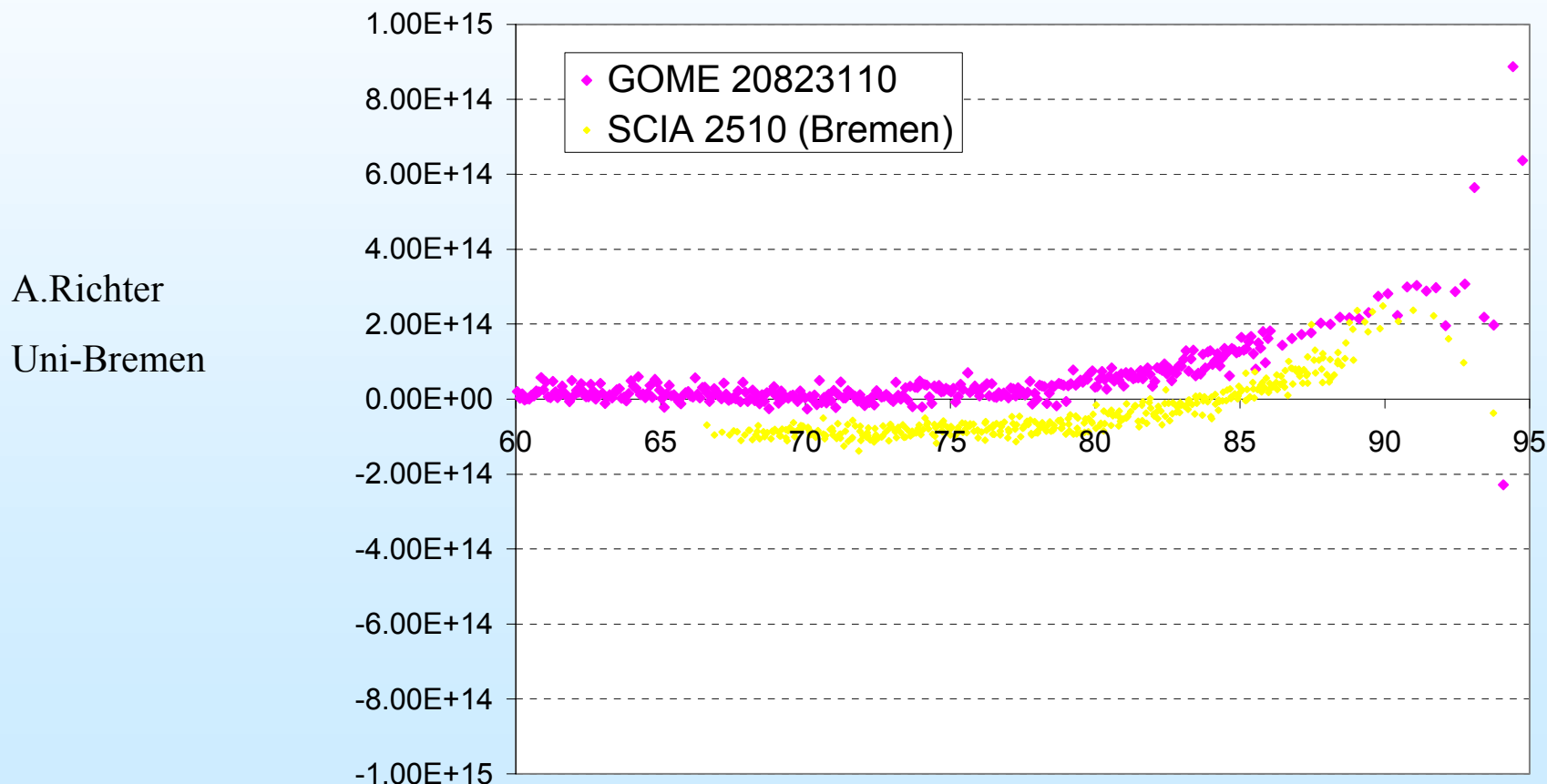




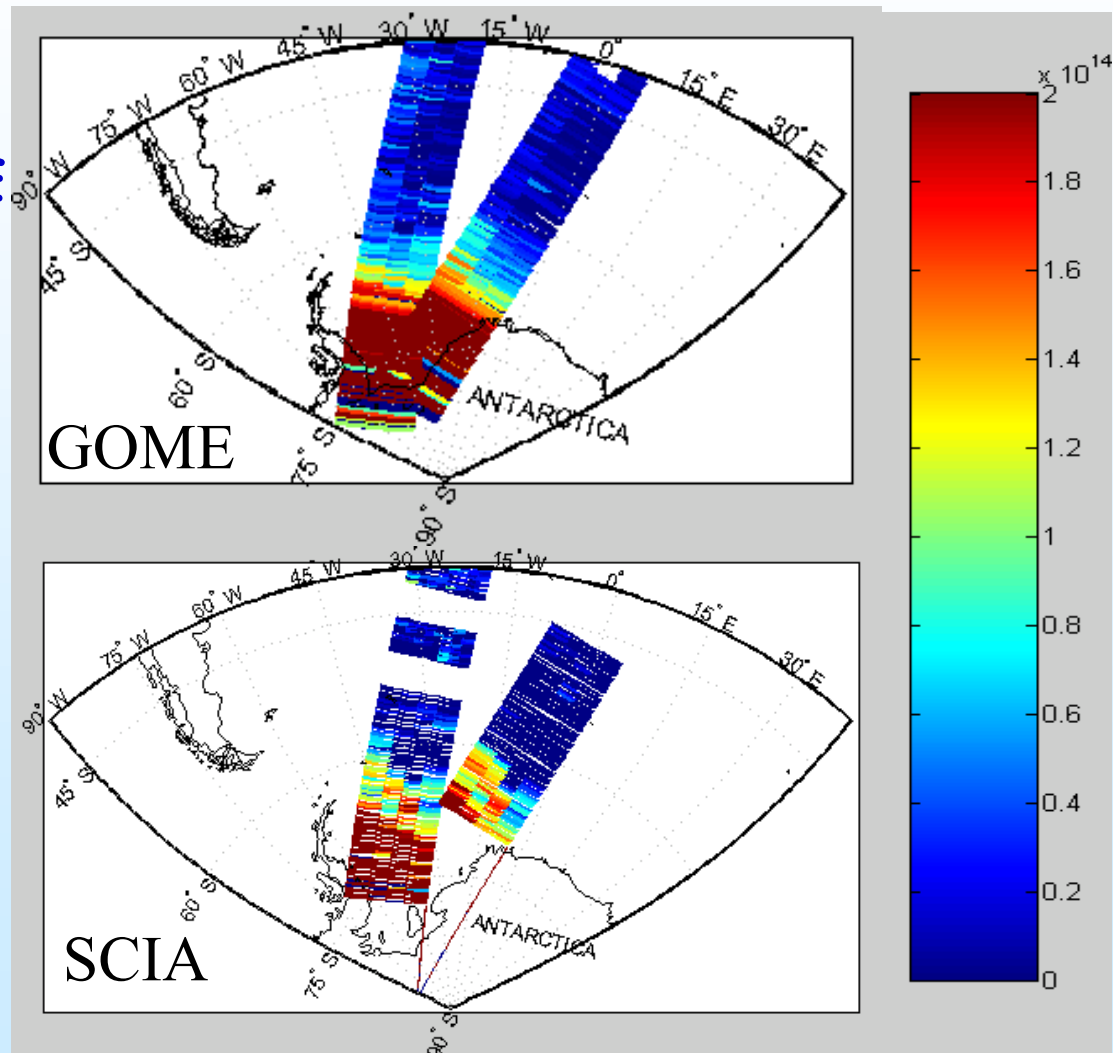
High OClO values only inside vortex

Including additional correction spectra leads to even better results

(But still offset is present)

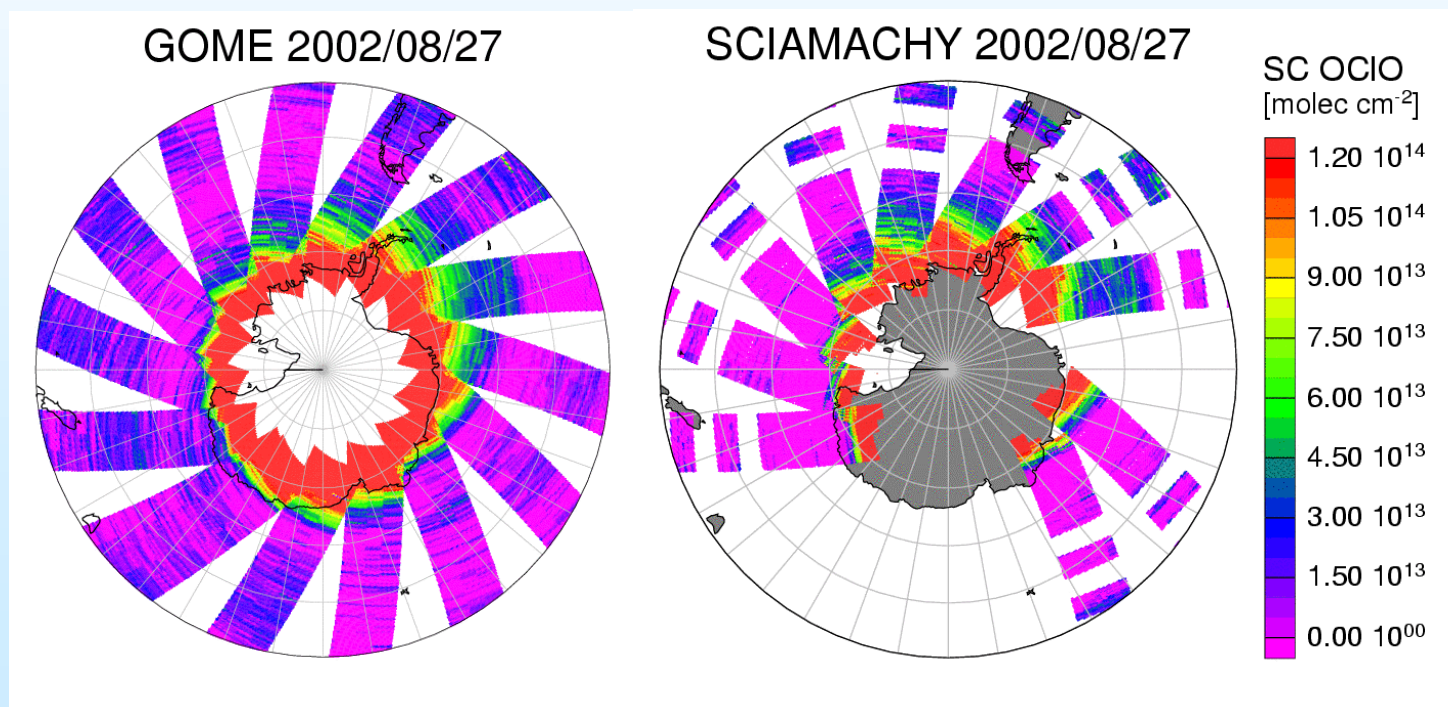


Comparison with GOME
(data:Uni-Heidelberg)



Comparison with GOME (High chlorine activation)

(data:Uni-Bremen)

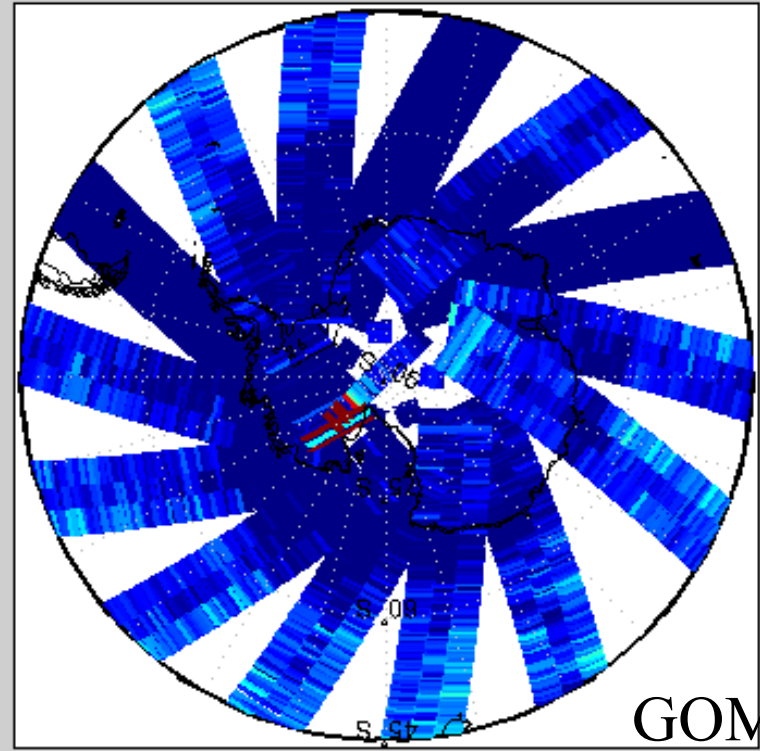
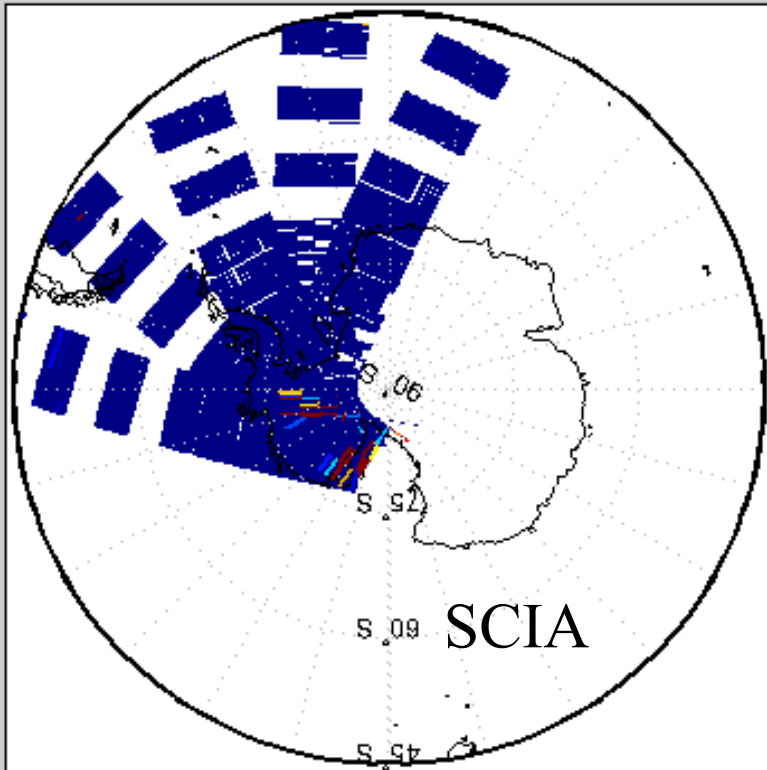


! SZA not identical

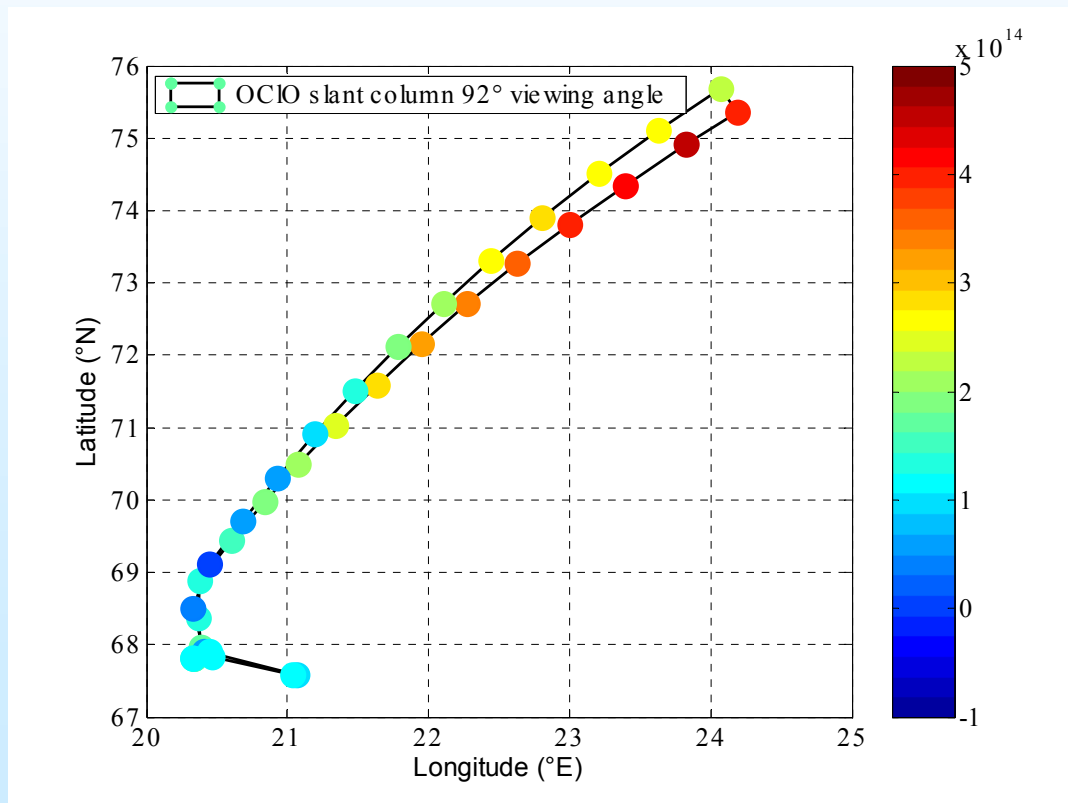
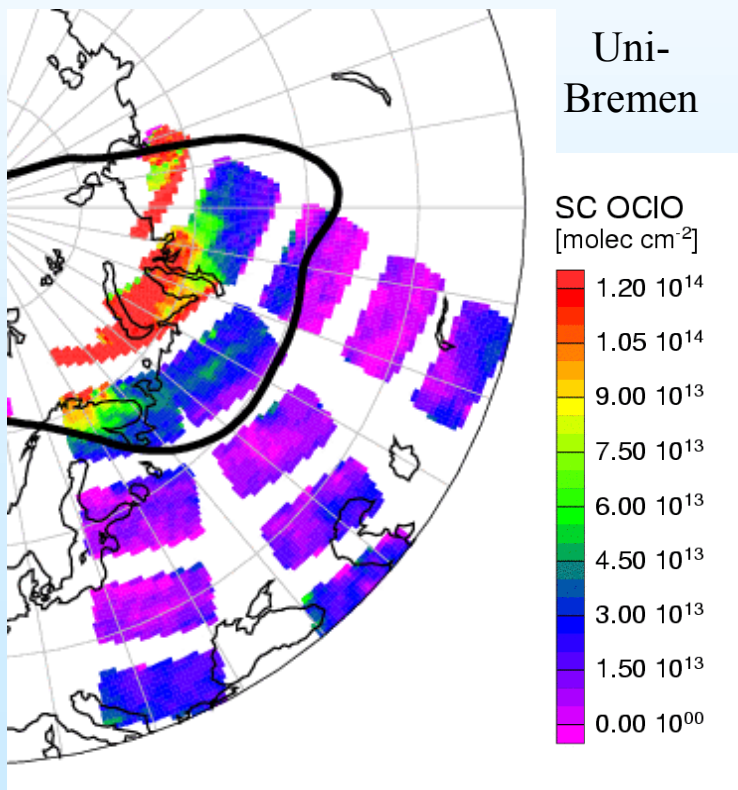
! Slant Columns

Comparison with GOME (Almost no chlorine activation)

(data:Uni-Heidelberg)



Good qualitative agreement between SCIA and AMAXDOAS (Wang et al., 2004)



Summary

- Scientific SCIA OCIO columns show good agreement with GOME and other observations
- They show the expected relation to atmospheric conditions
- High scatter and offset can be reduced by including polarisation spectra and additional correction spectra
- SCIA-OCIO columns are a very promising data product