Samples from the EU QUANTIFY project: comparison of Oslo and UCI CTMs

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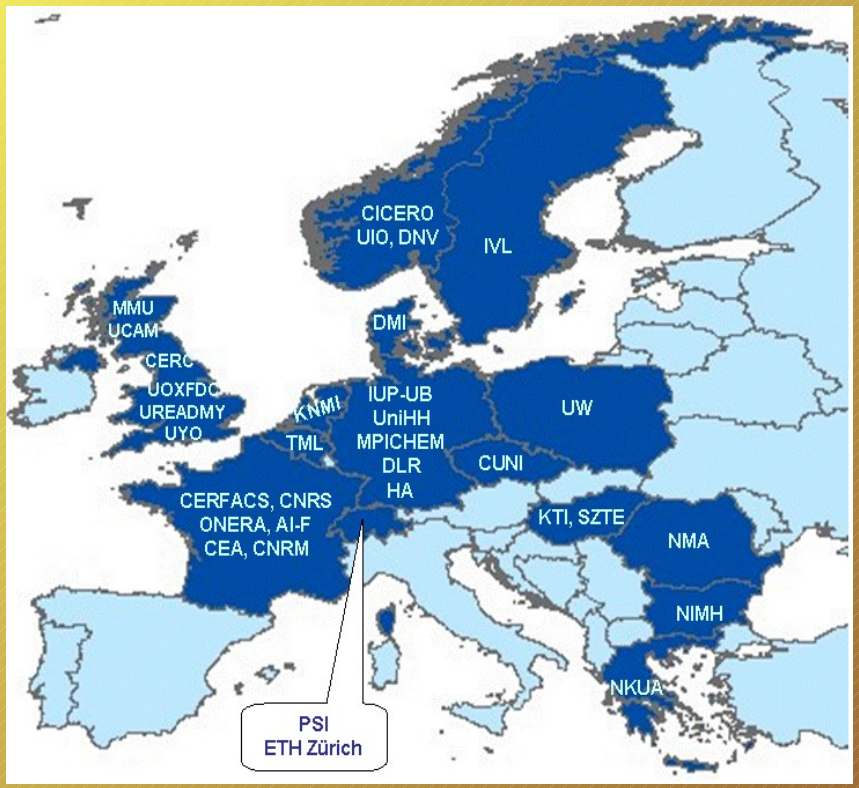
EU QUANTIFY project

Quantifying the Climate Impact of global and European Transport Systems

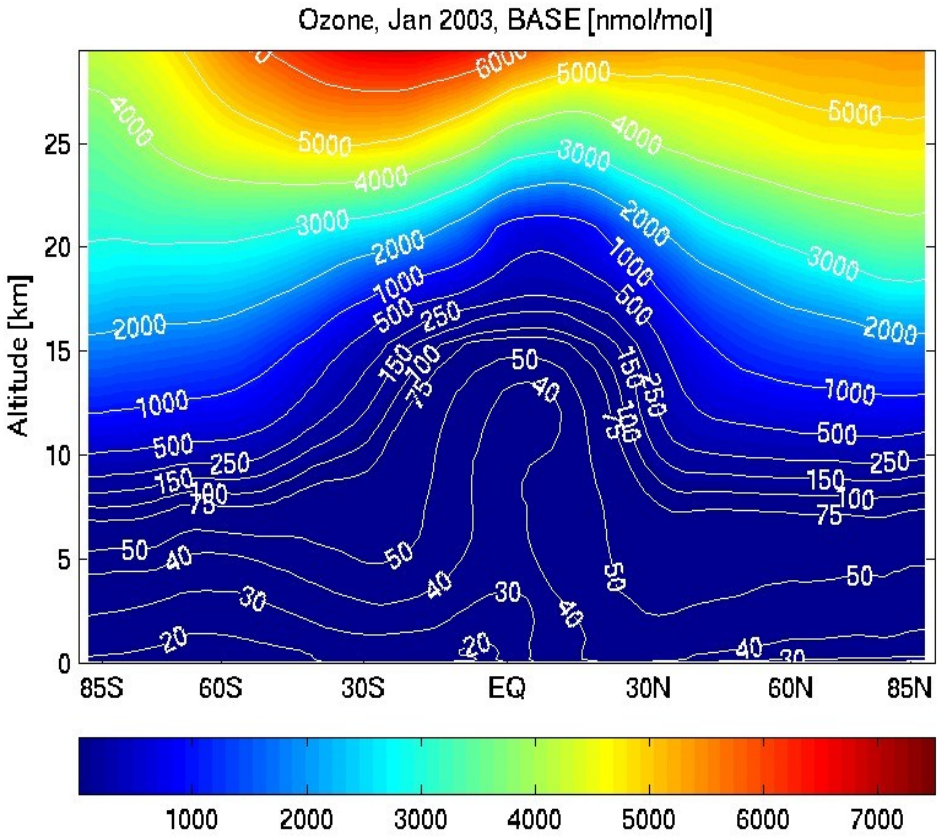
- Objective: To quantify the climate impact of the global and European transport systems for the present situation and for different scenarios of future development.
- Participants: 35 from 16 countries
- Duration: Mar. 2005 ~ Feb. 2010



General properties of the two CTMs

MODEL	UCI CTM	Oslo CTM2
Resolution	T42, 37L	T42, 40L
Met-field	ECMWF-IFS	ECMWF-IFS
Advection	S.O.M.	S.O.M.
Emission	QUANTIFY	QUANTIFY
Chemistry	ASAD, Linoz	Full

Zonal mean O3, BASE in Jan.



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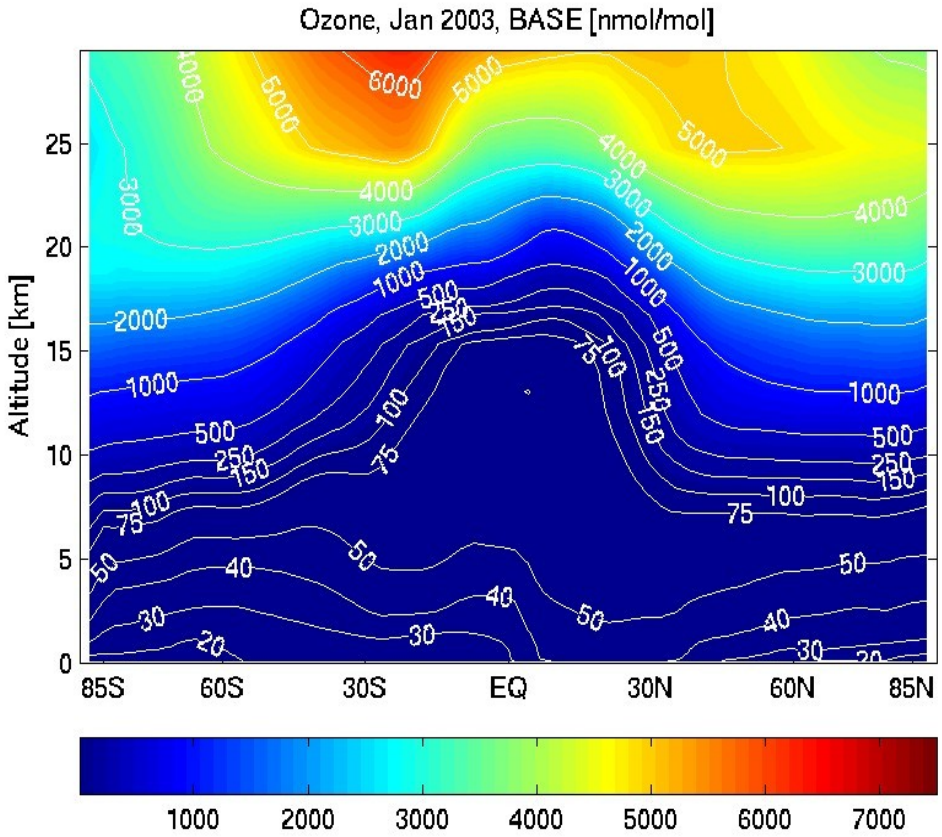

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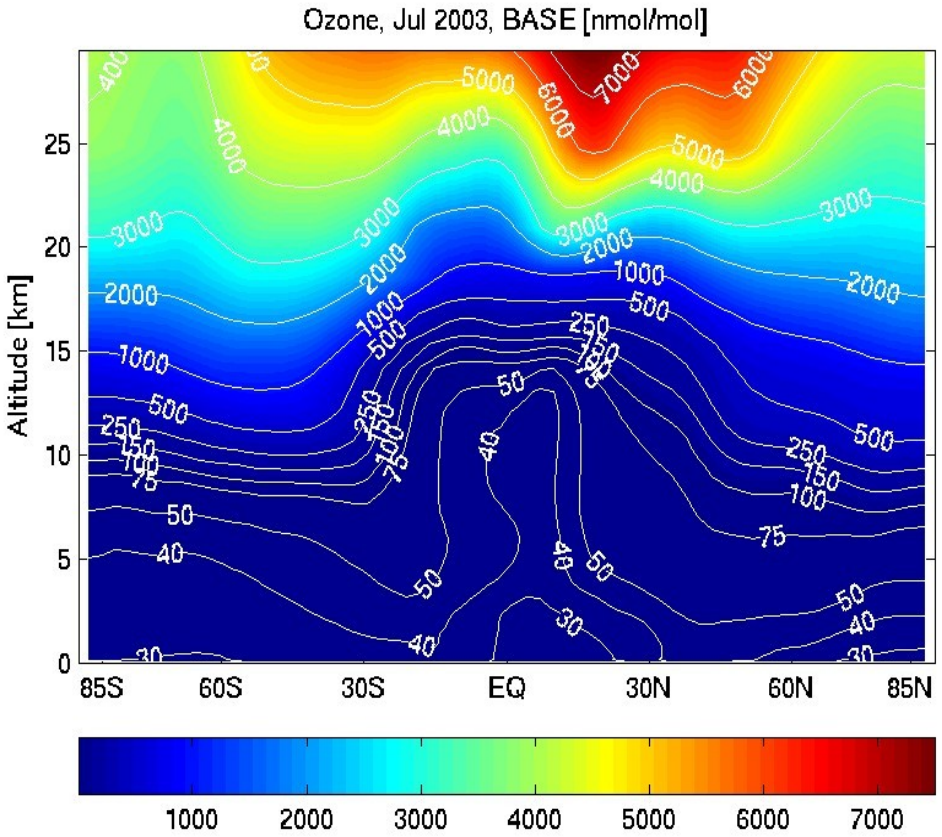
Zonal mean O3, BASE in Jul.



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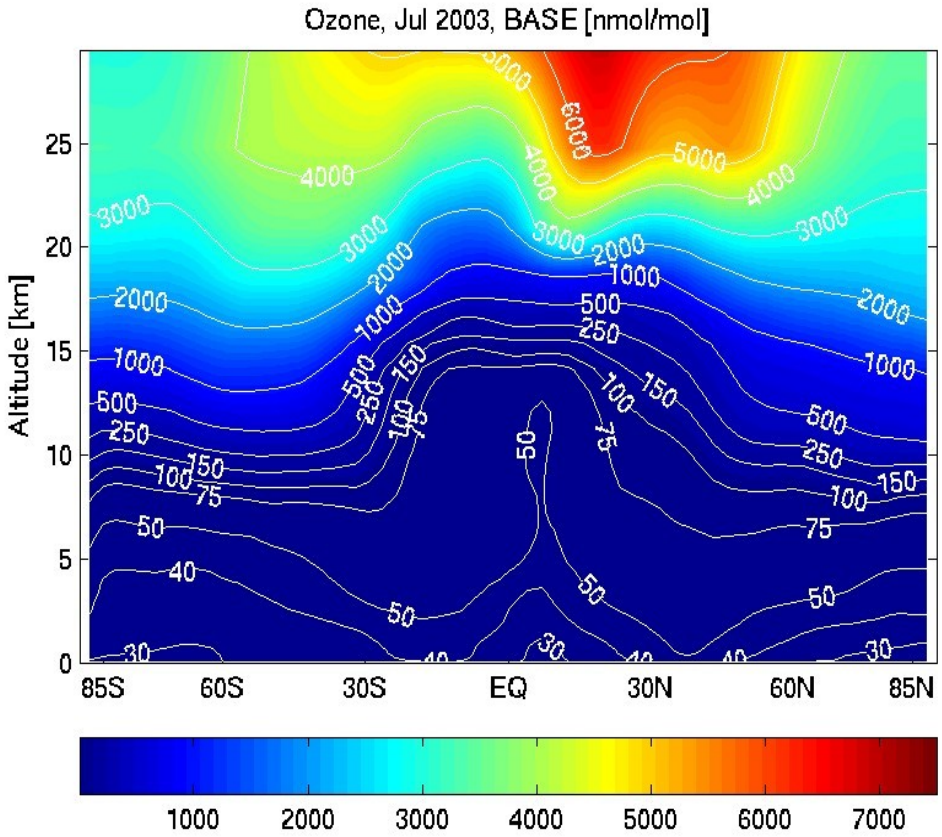

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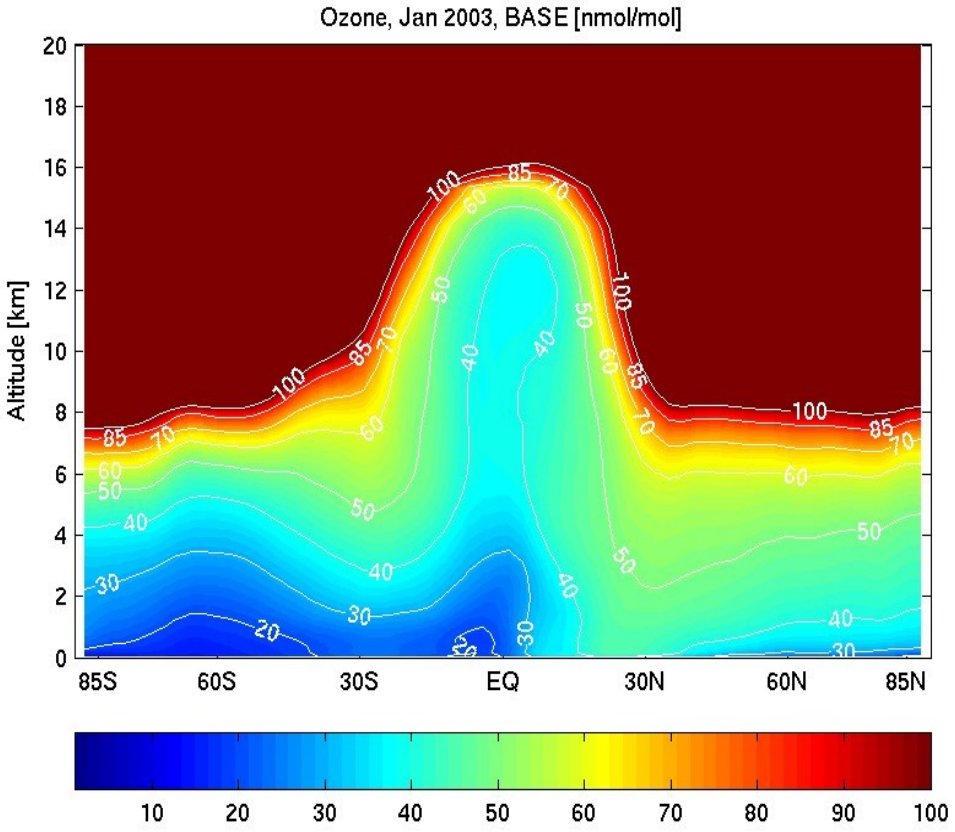

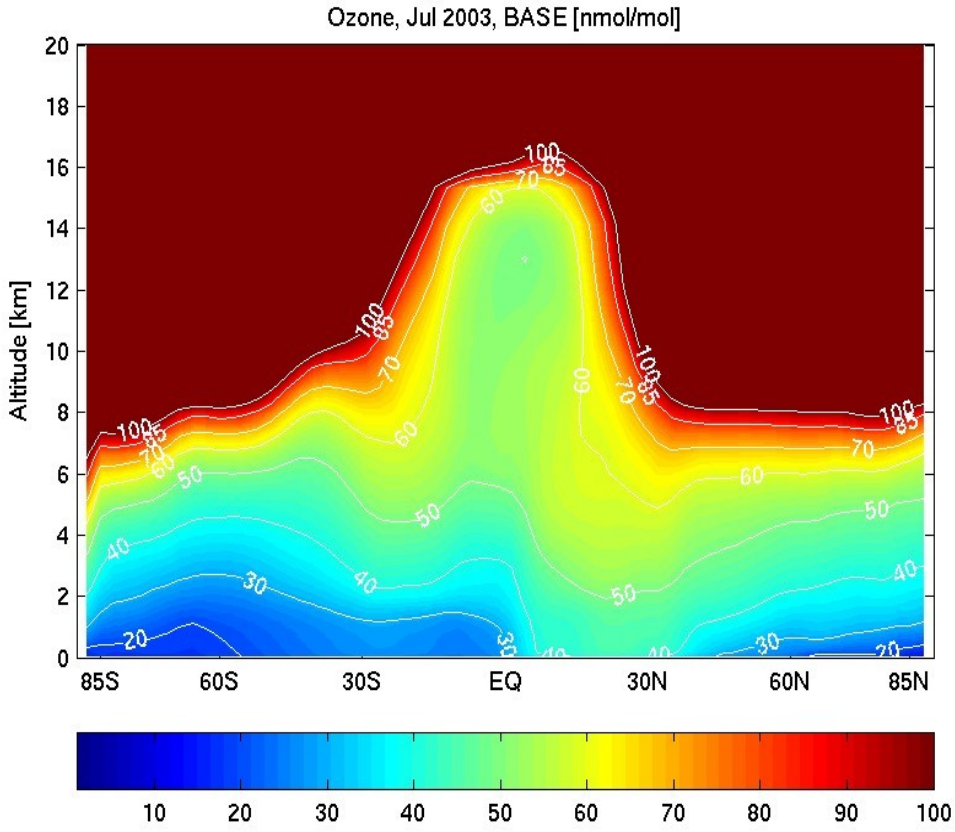

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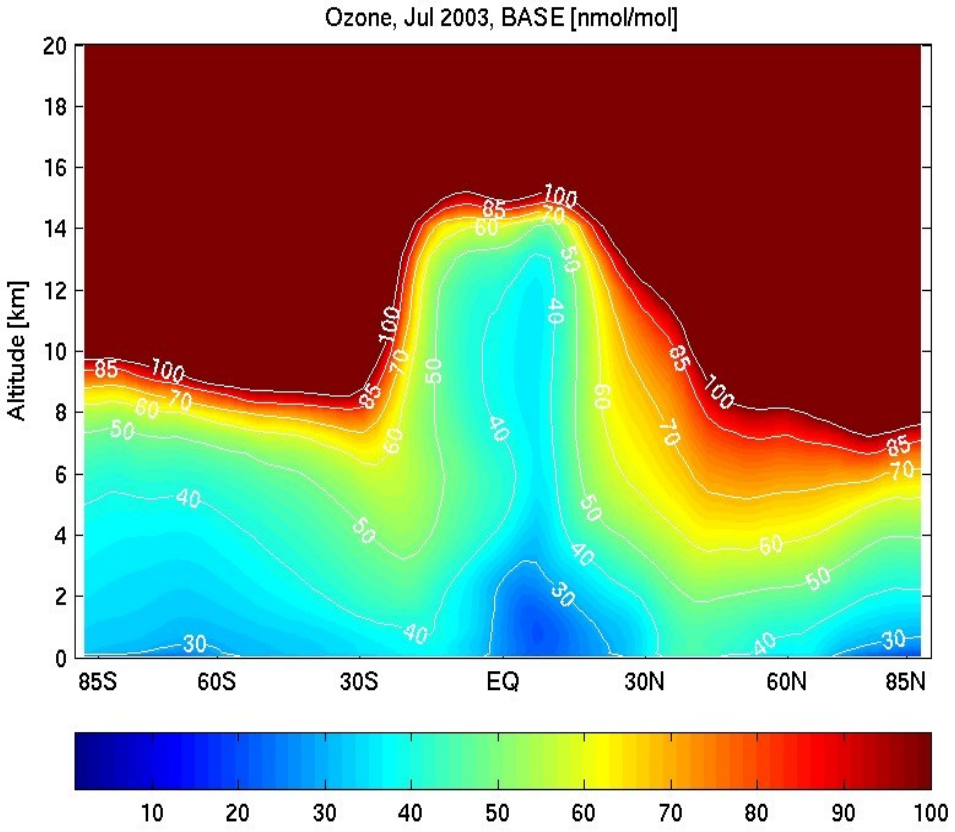

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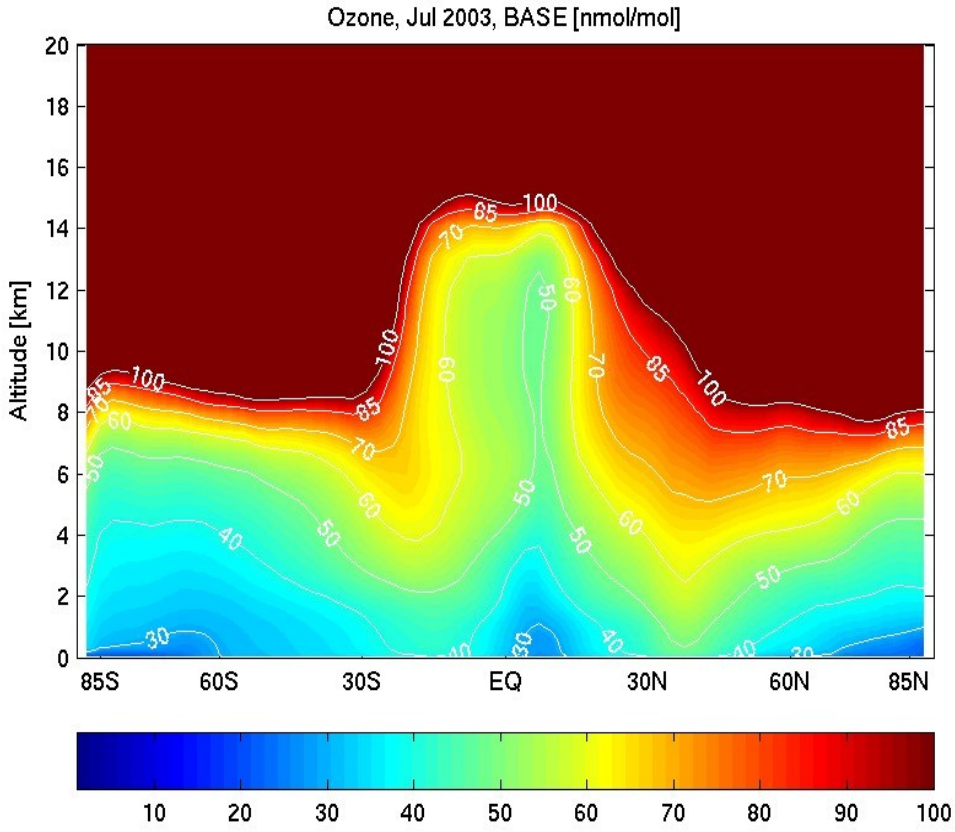

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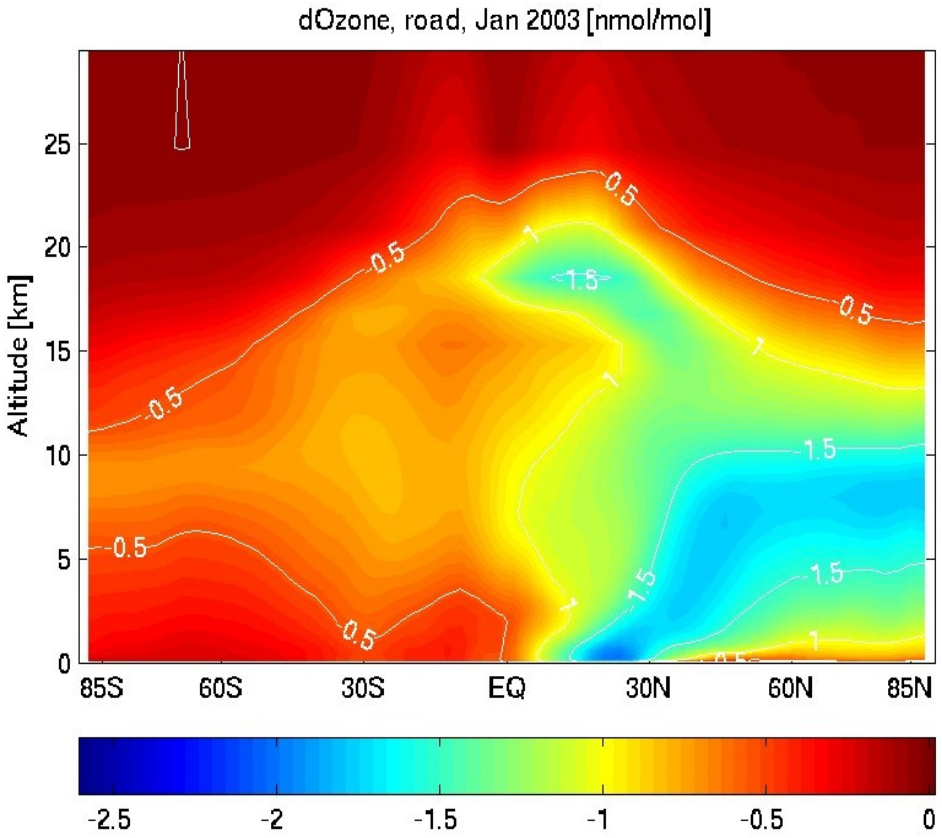

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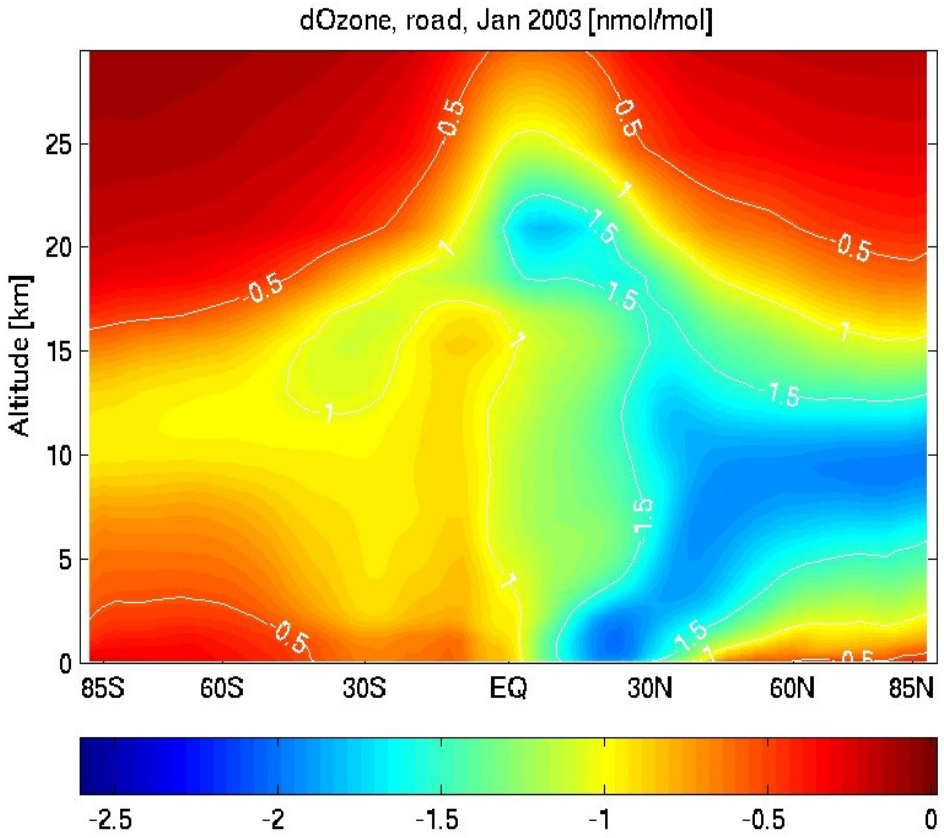

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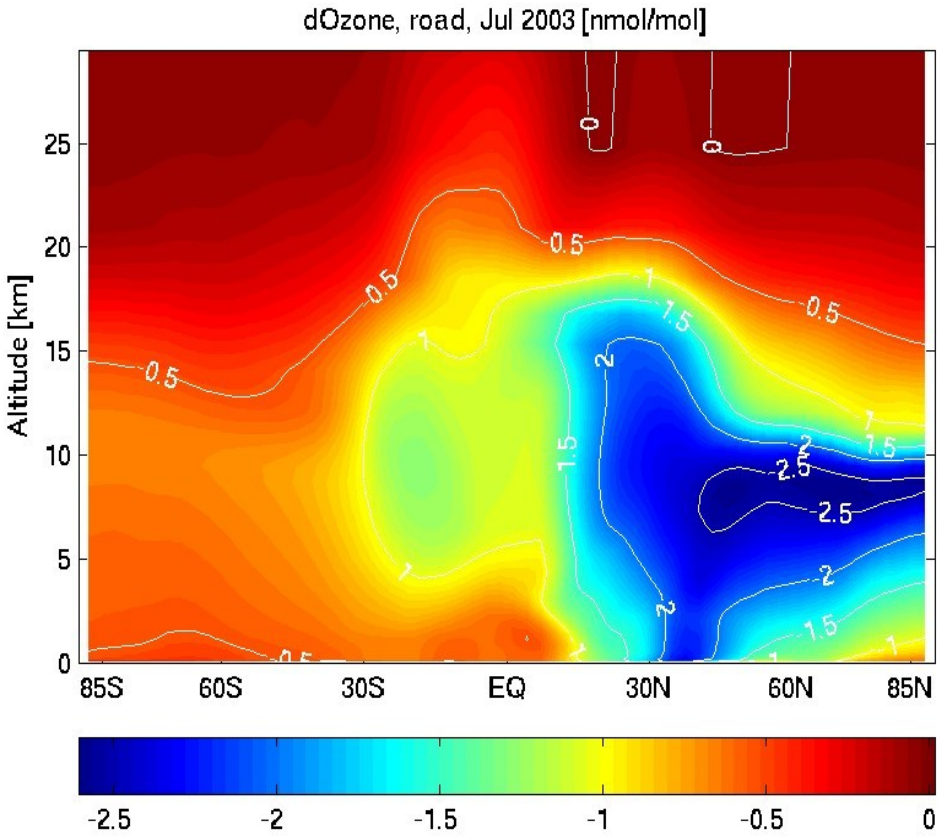

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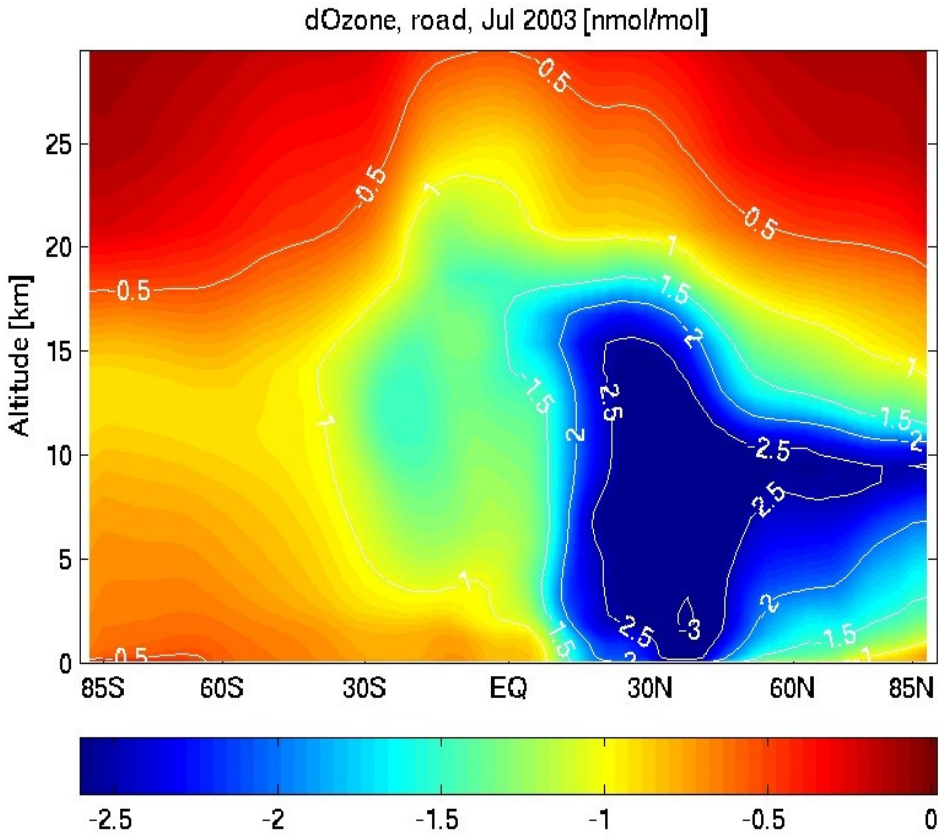

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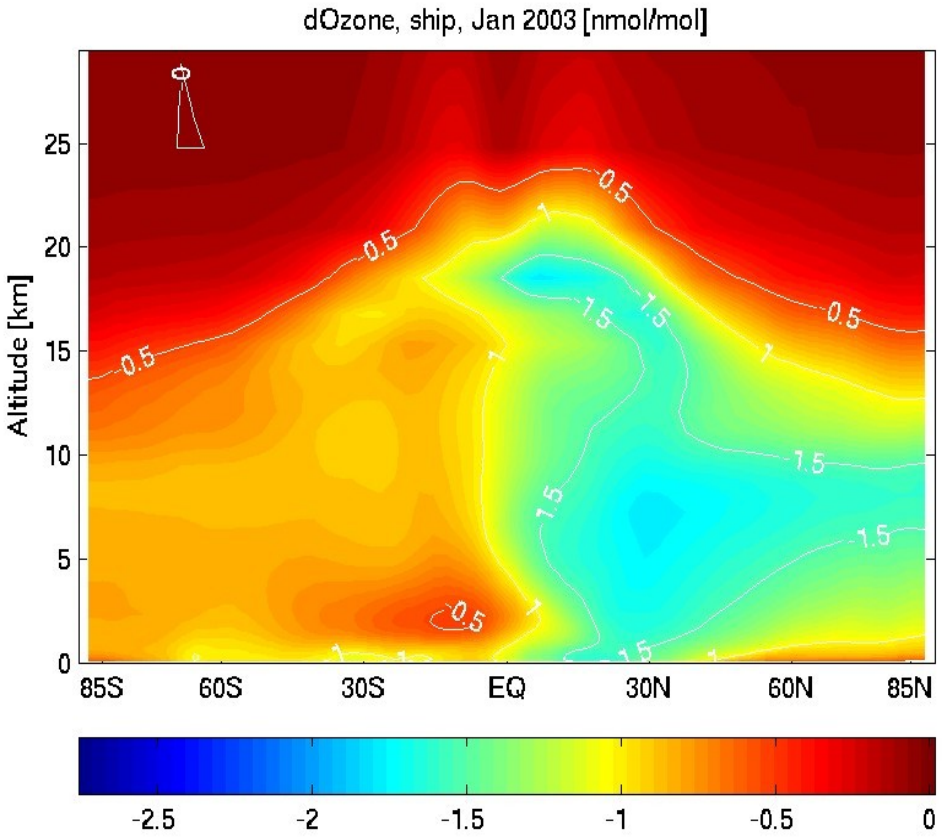

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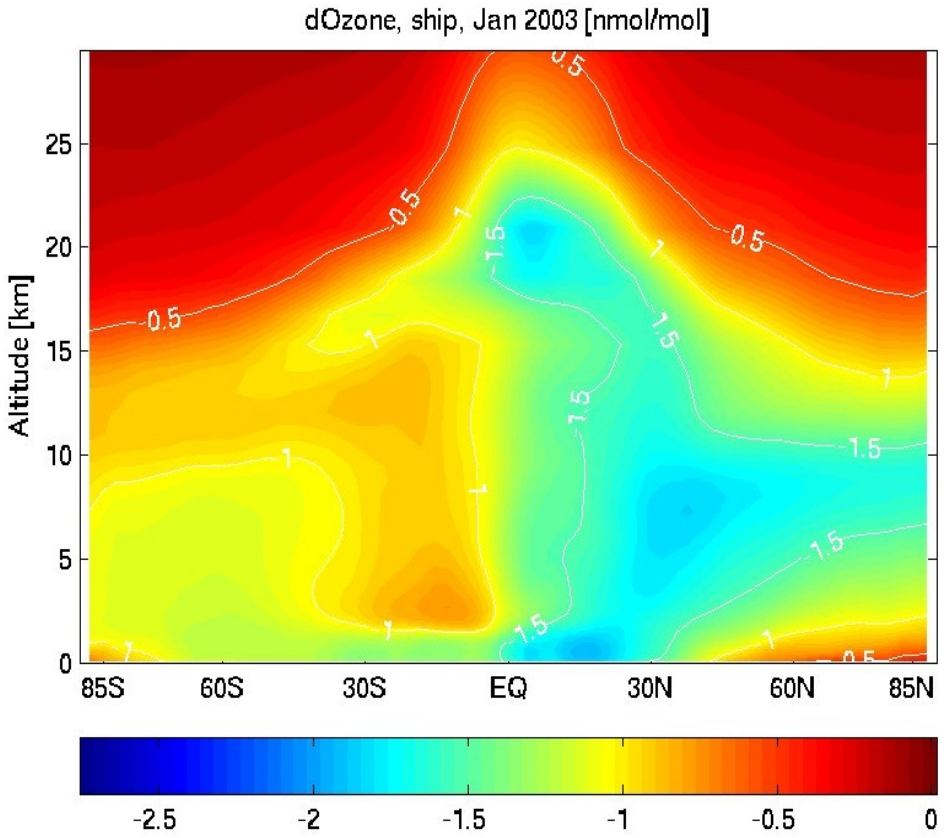

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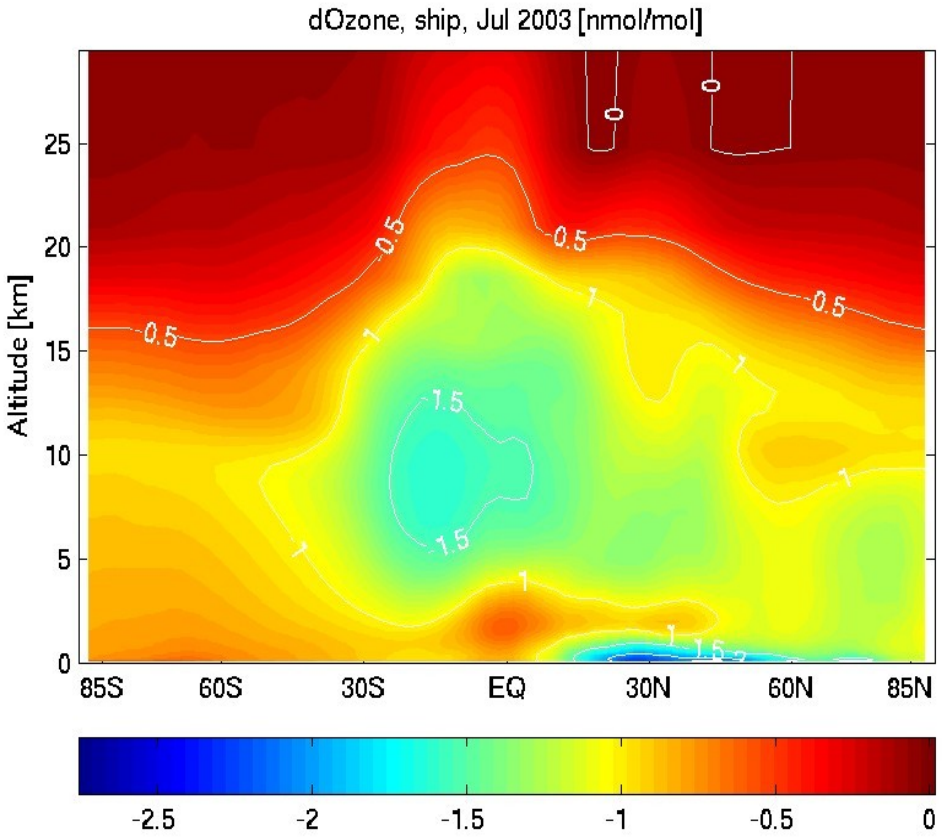

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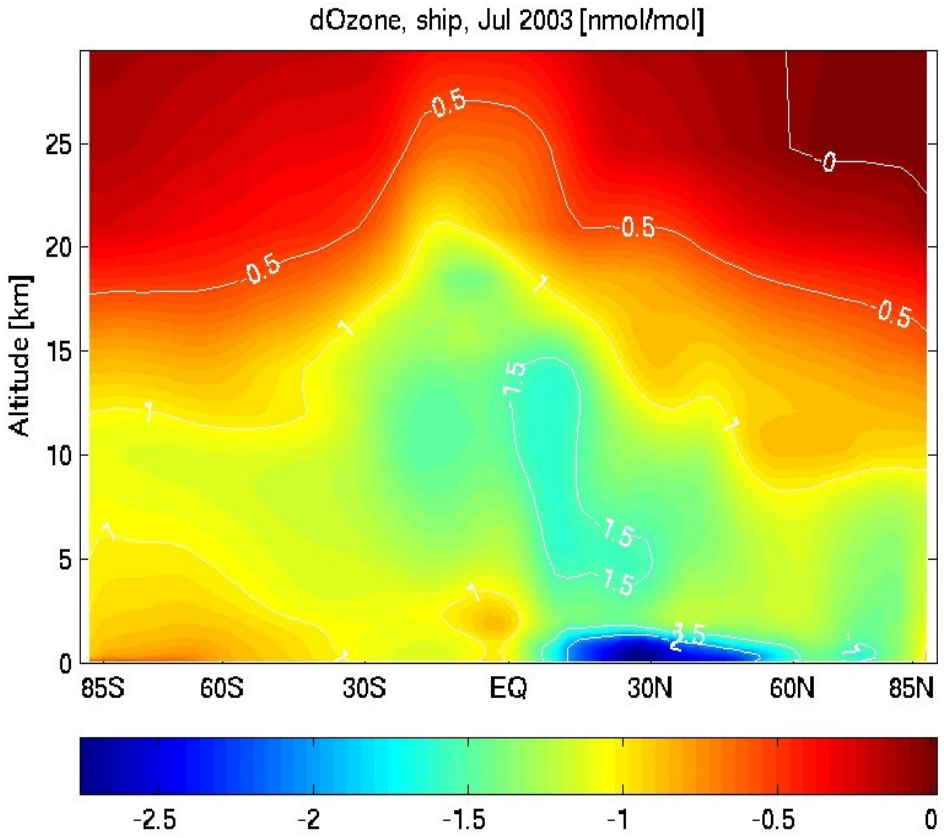

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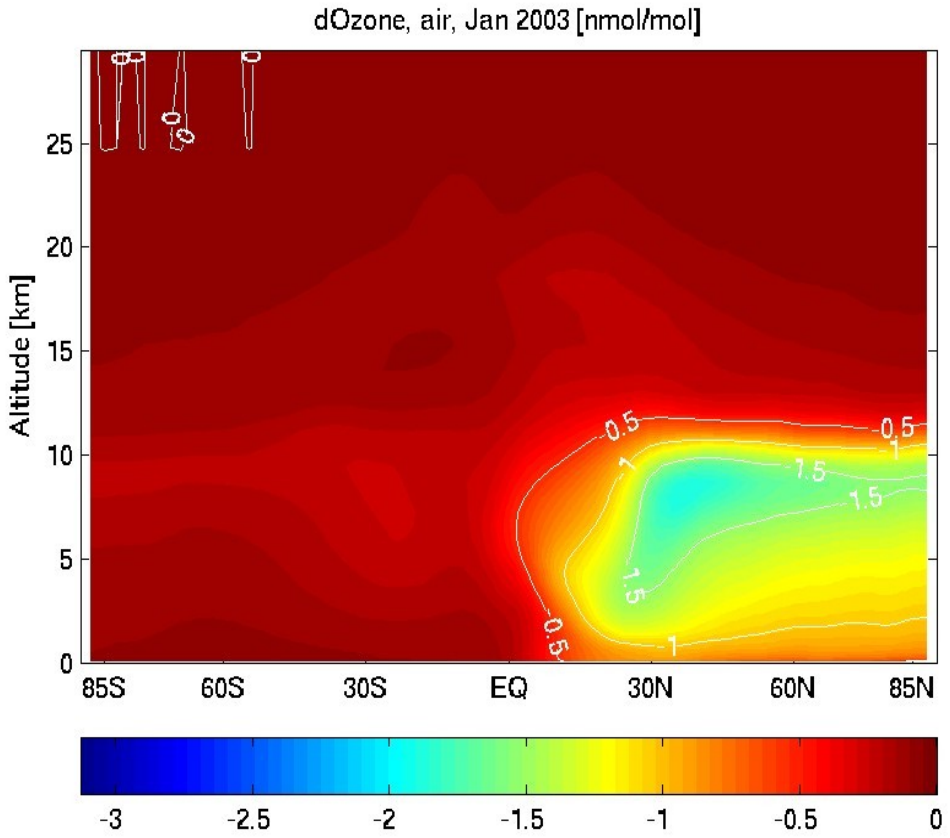
dOzone, AIR in Jan.



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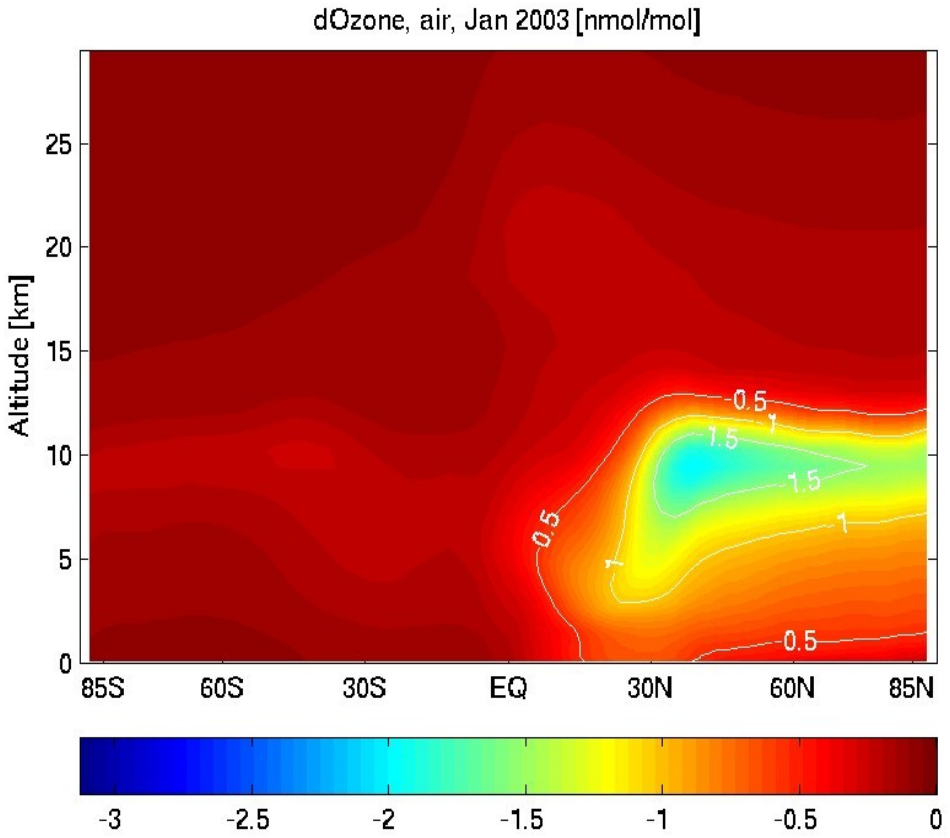

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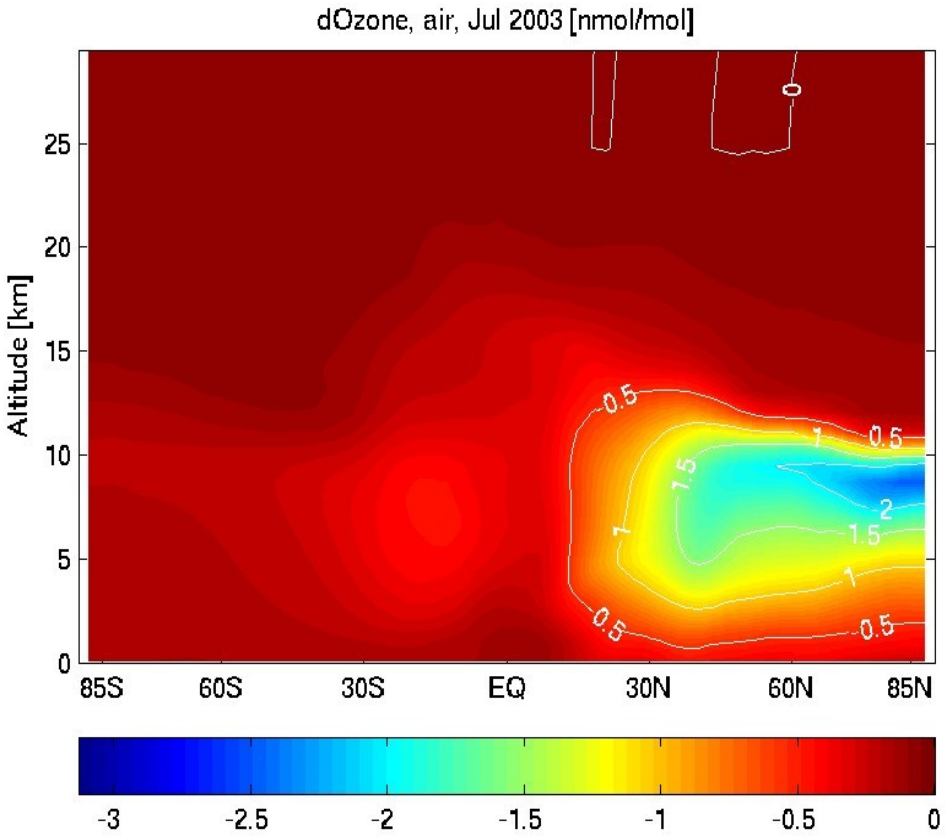

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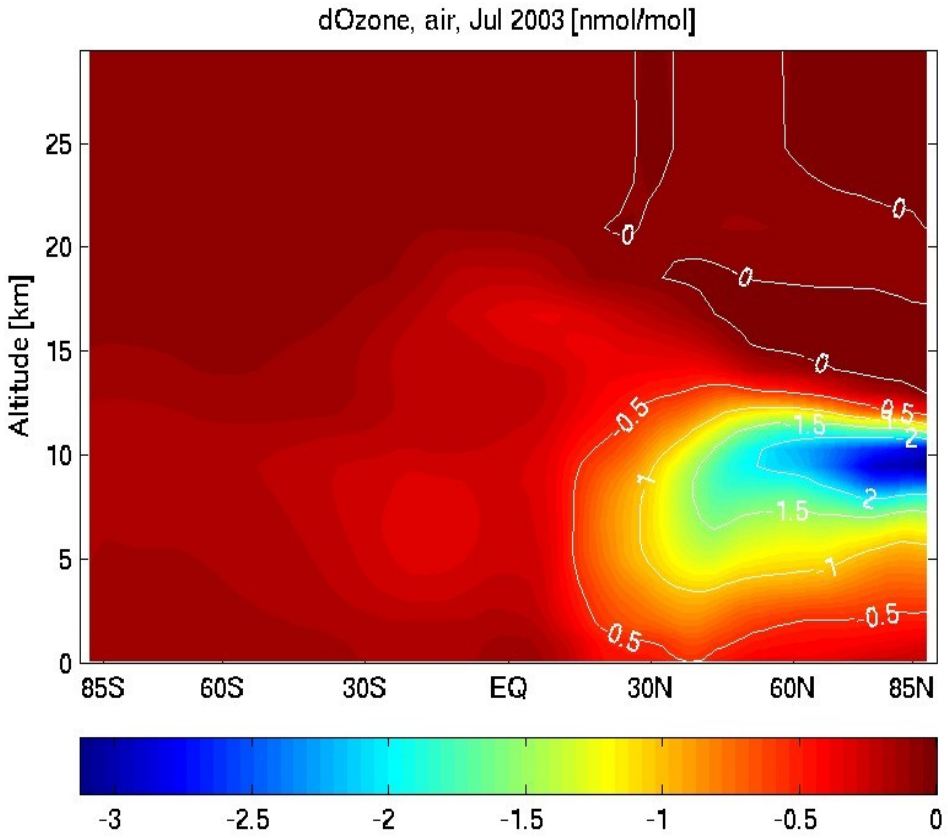

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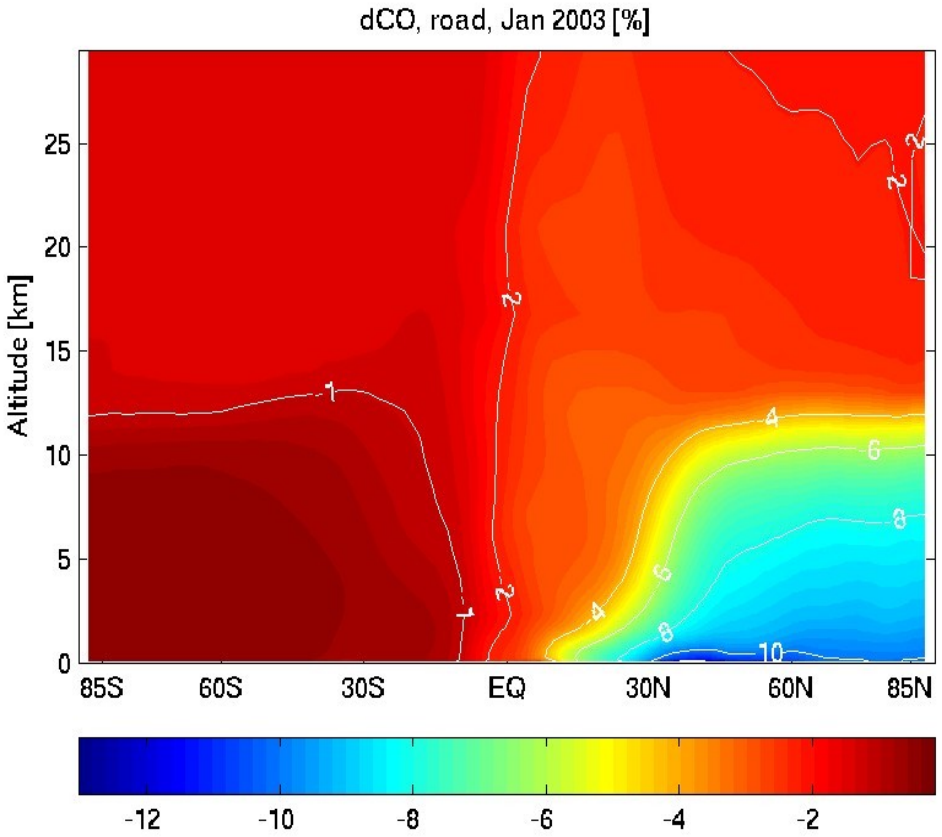

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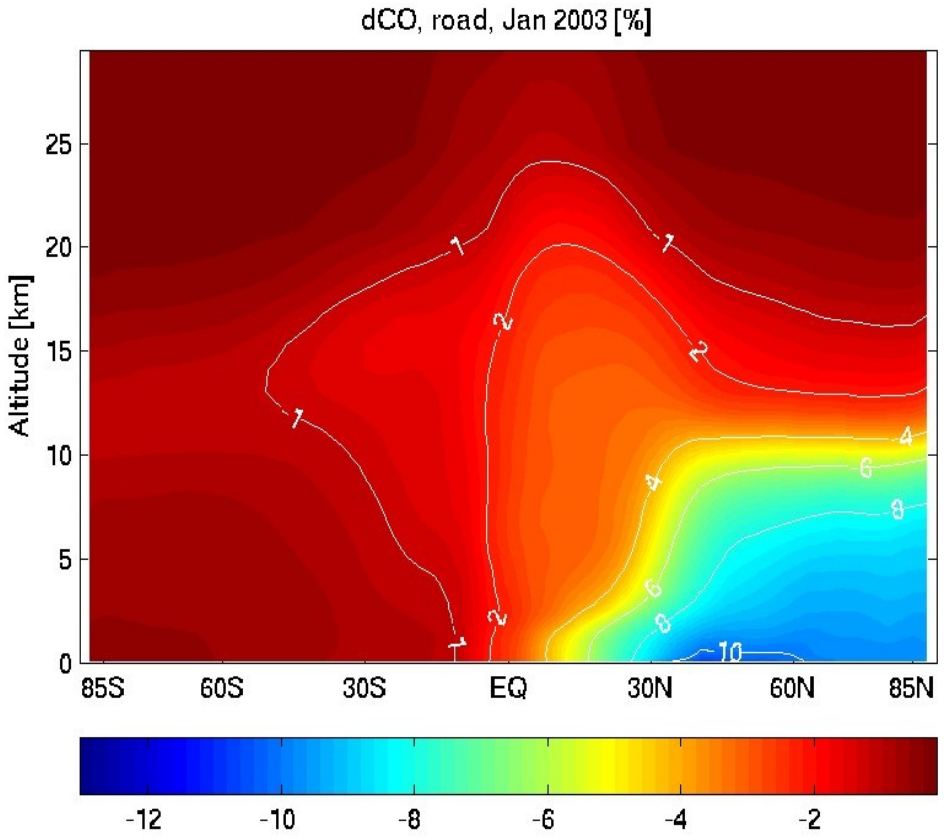

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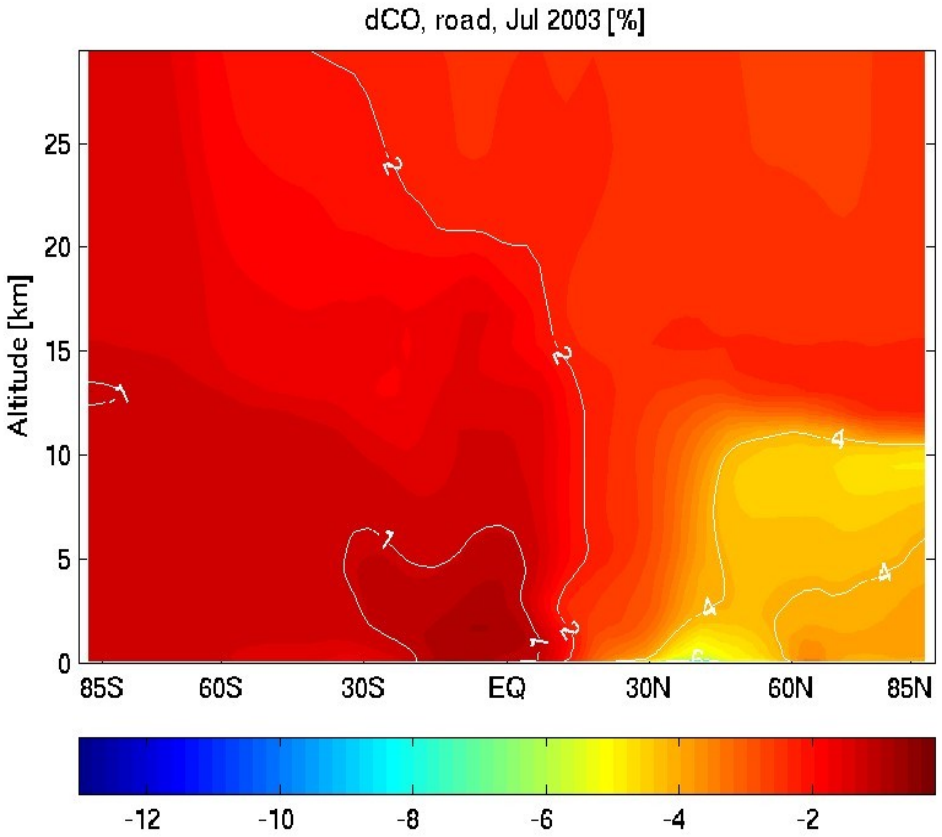

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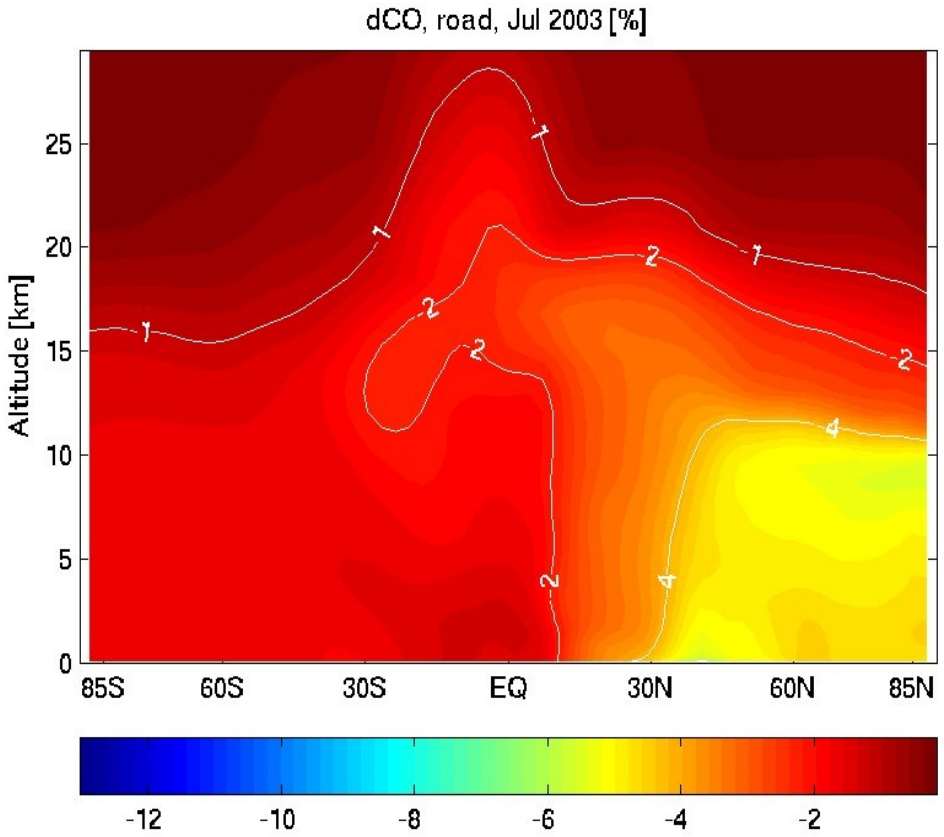

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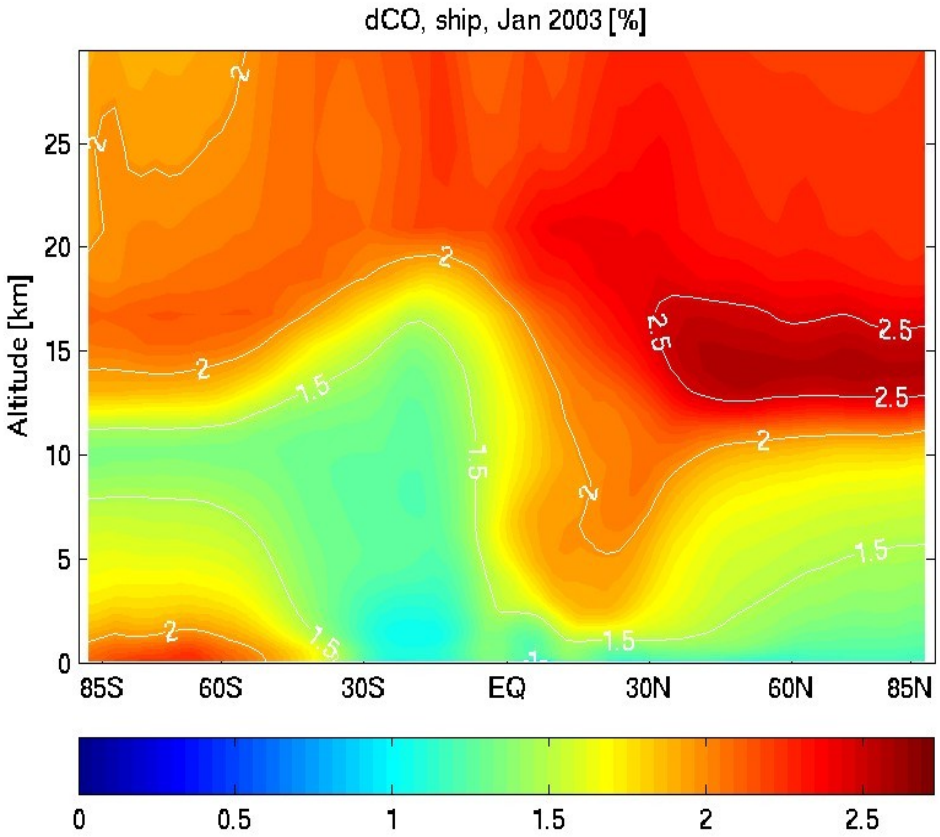

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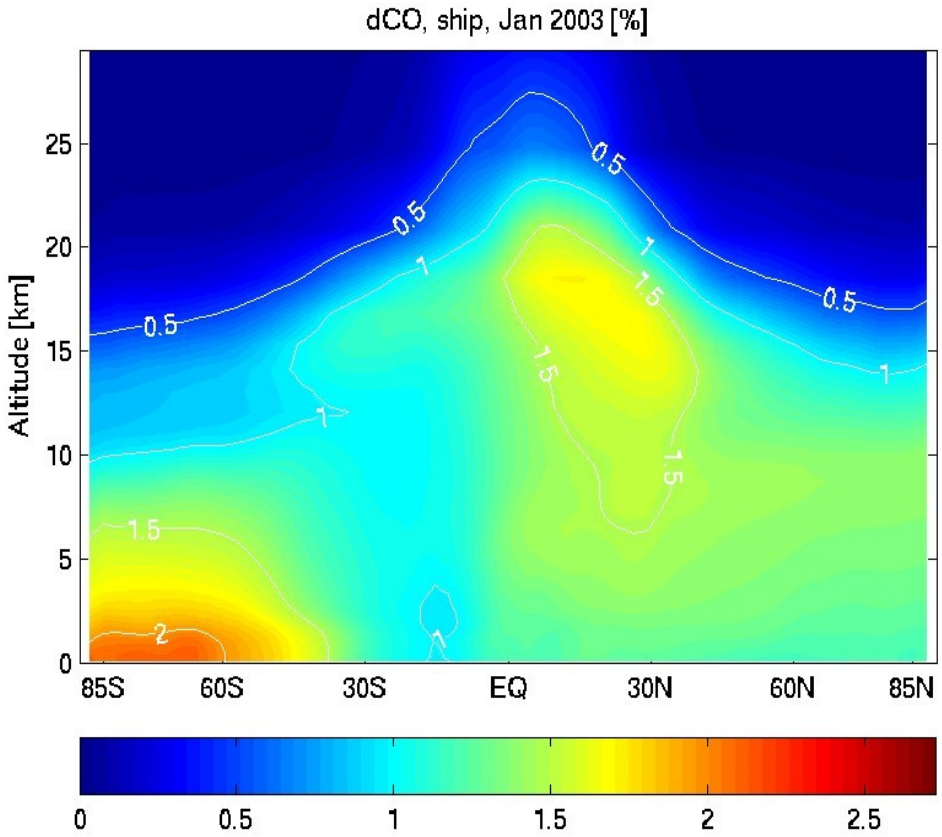

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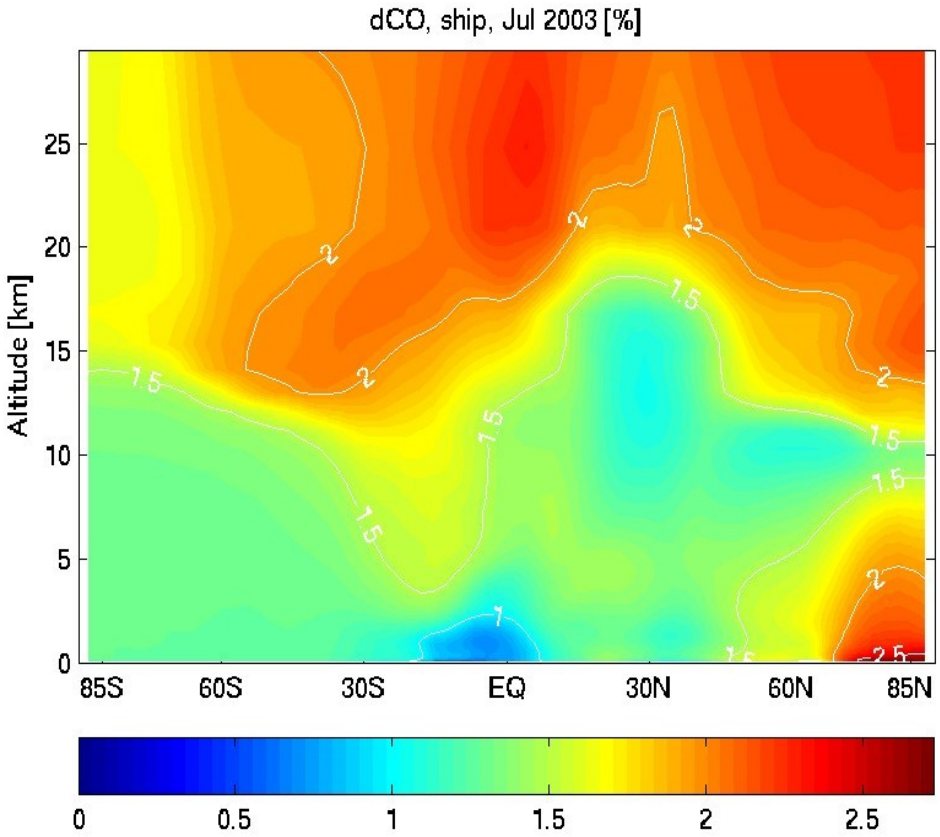

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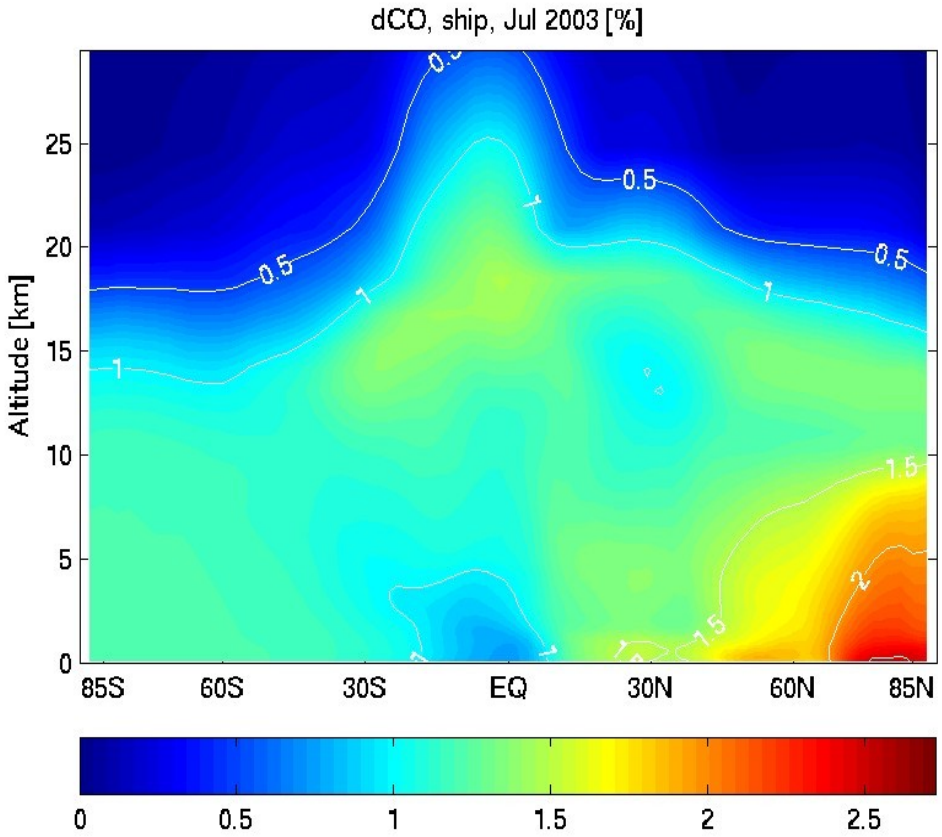

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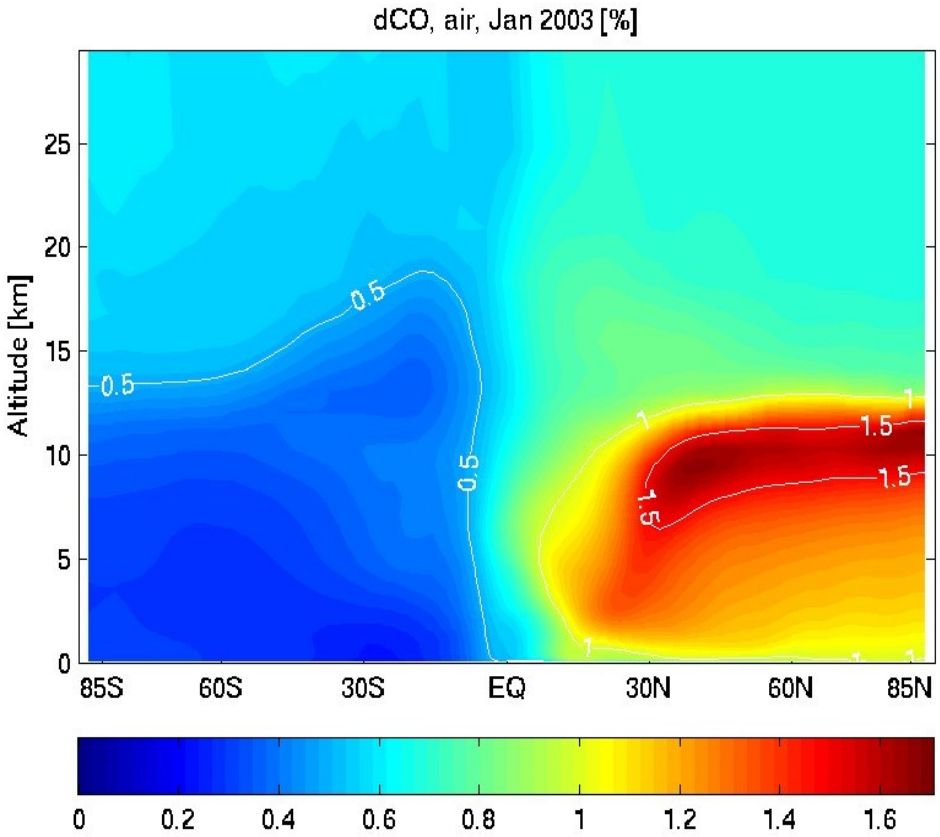

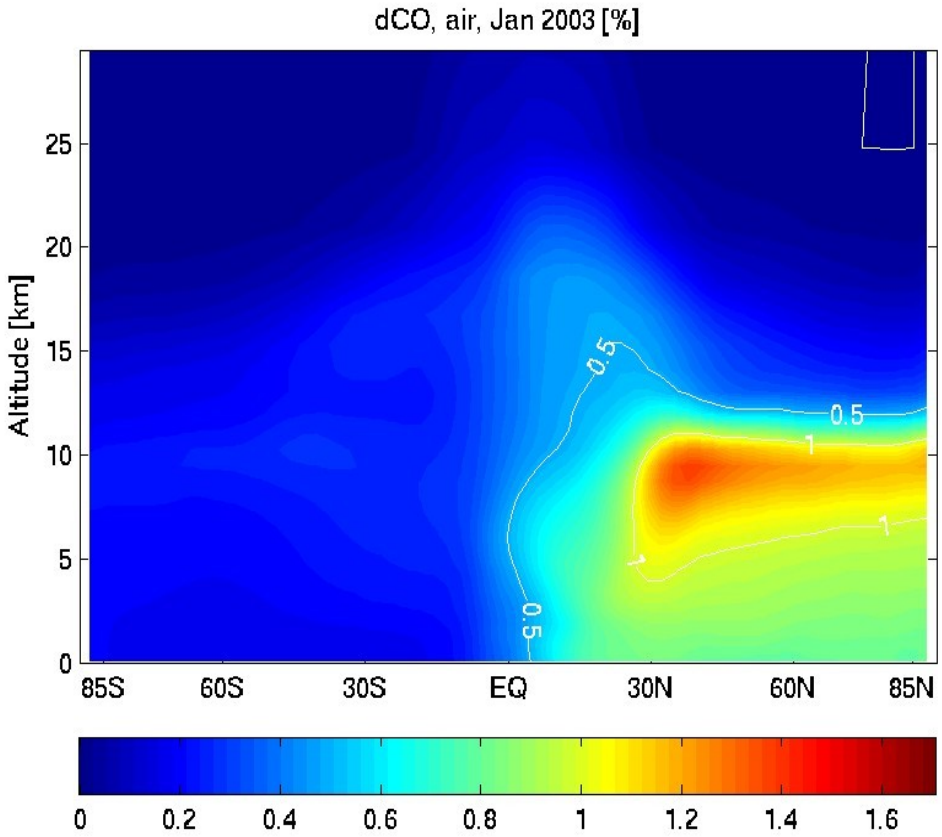

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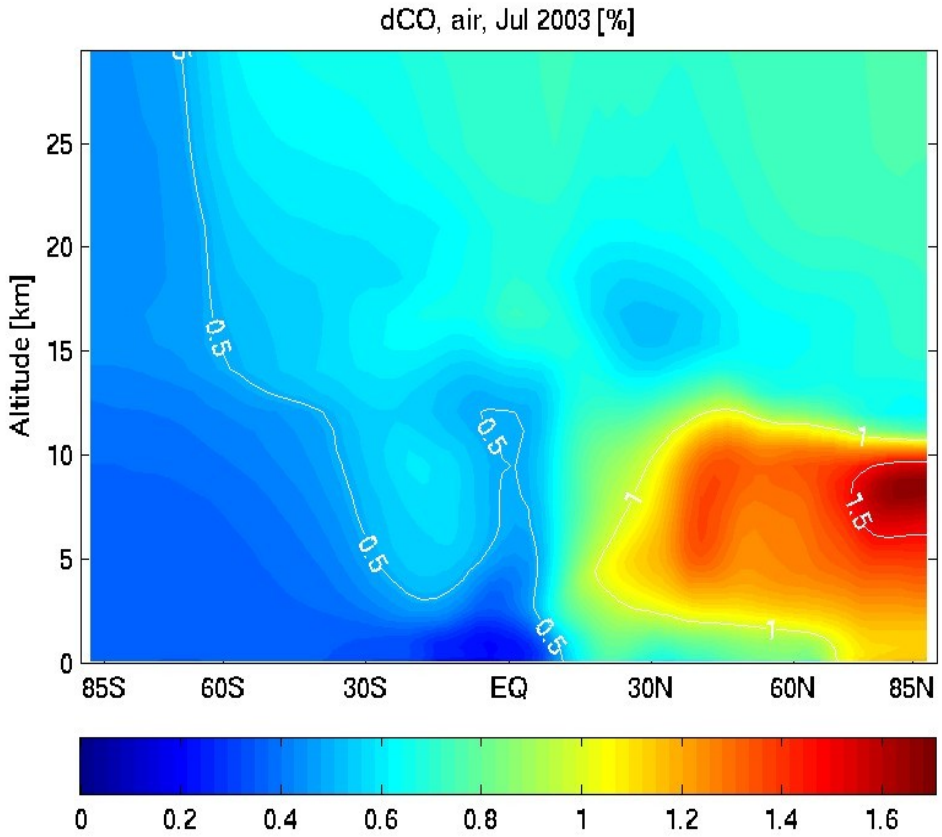

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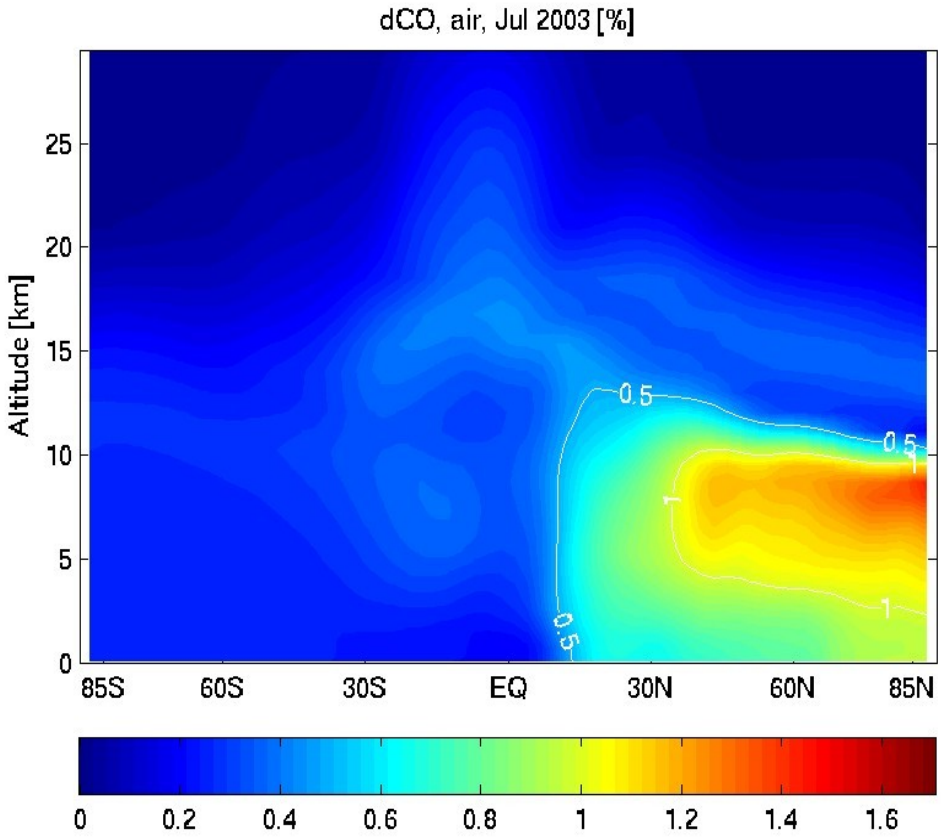

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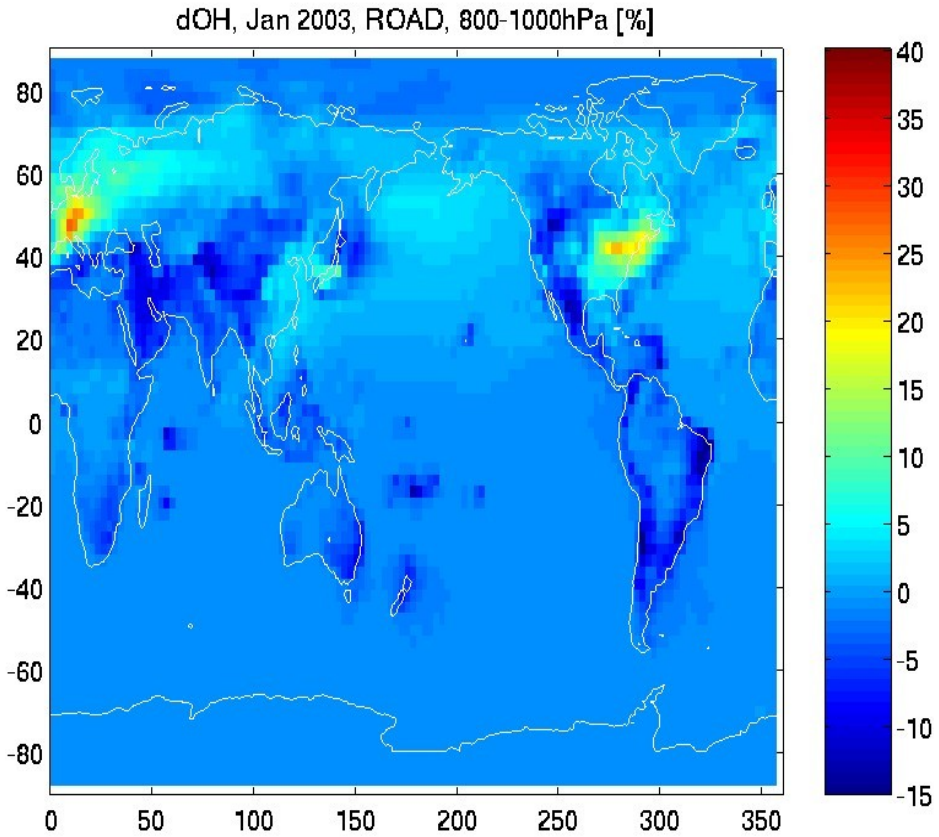

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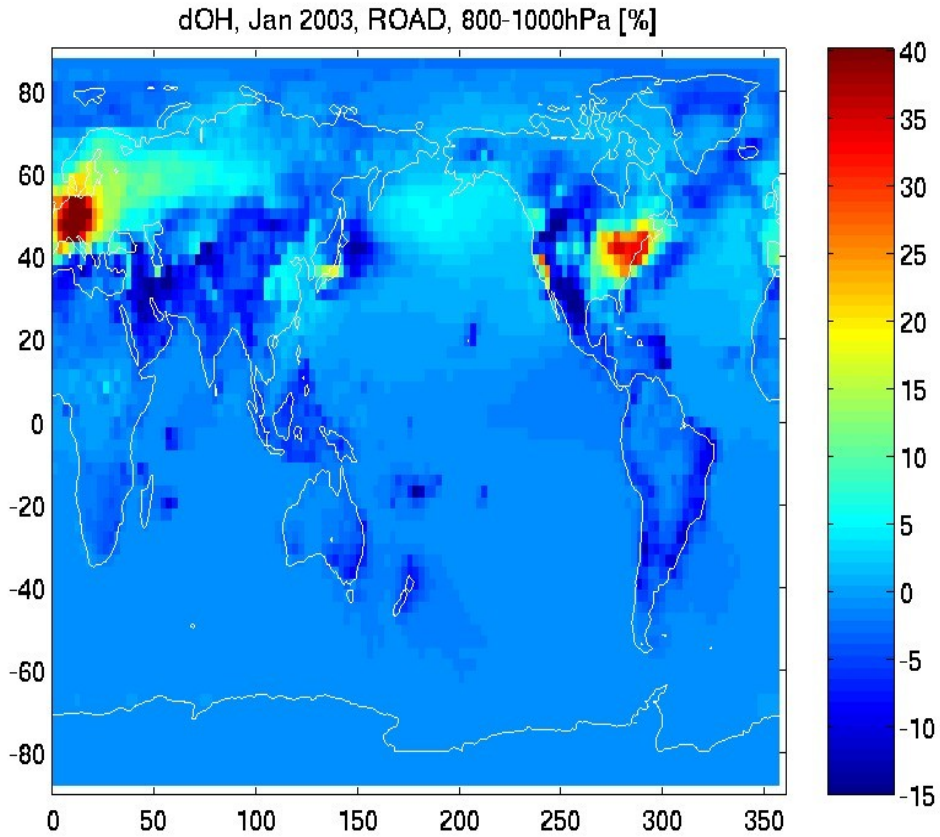

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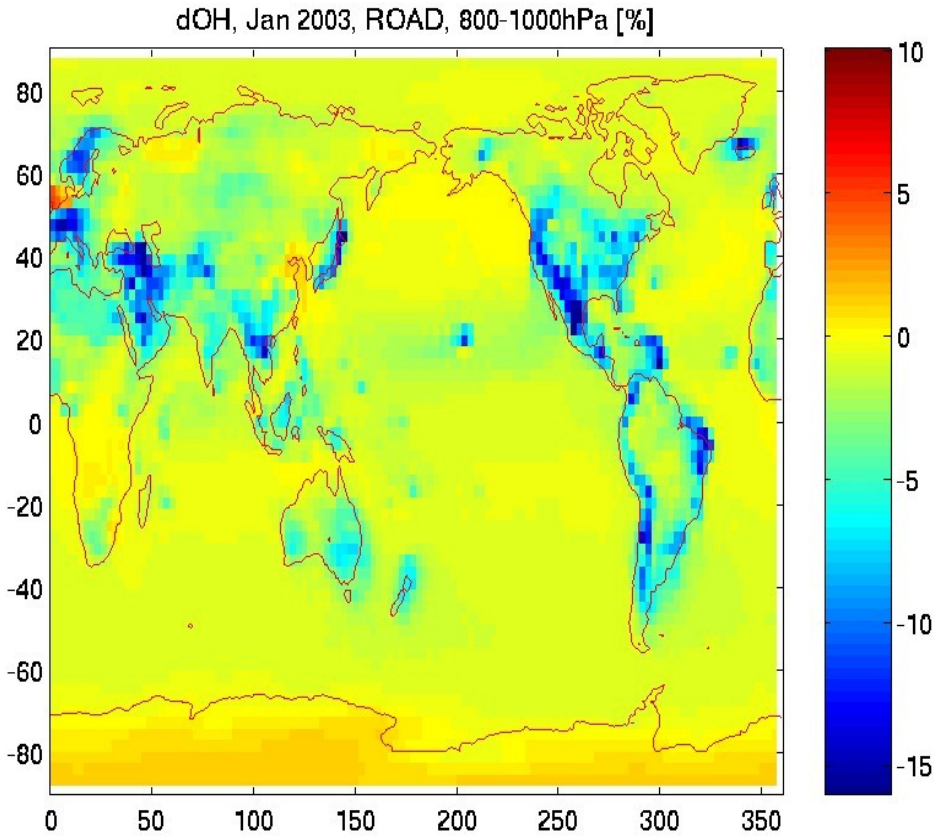

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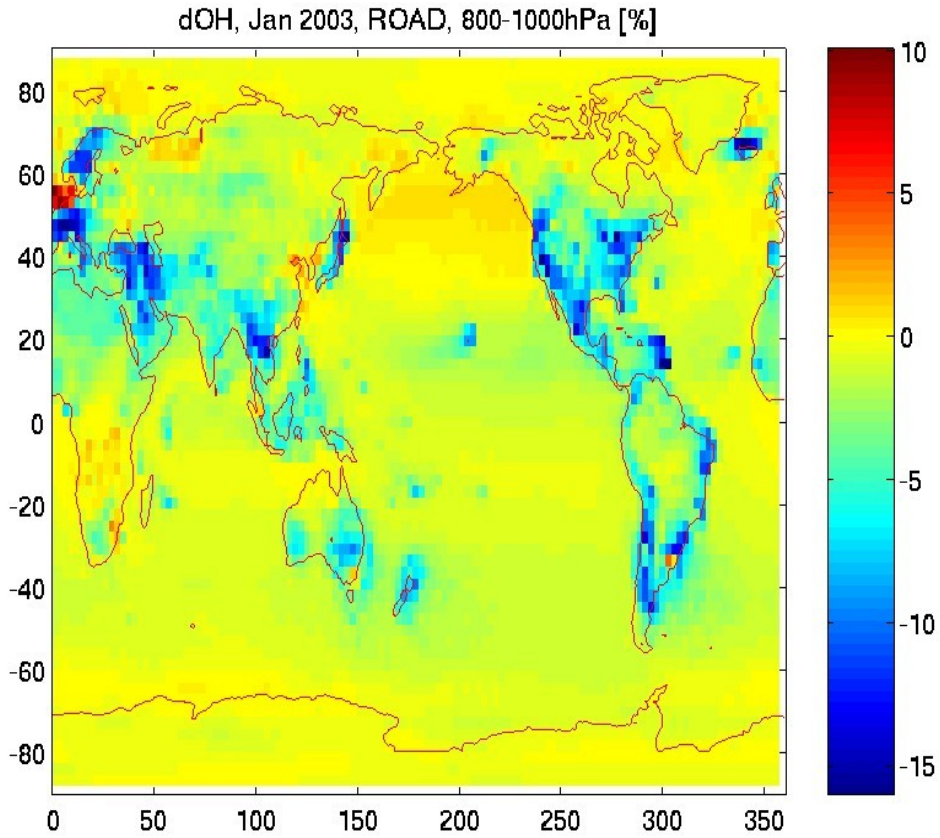

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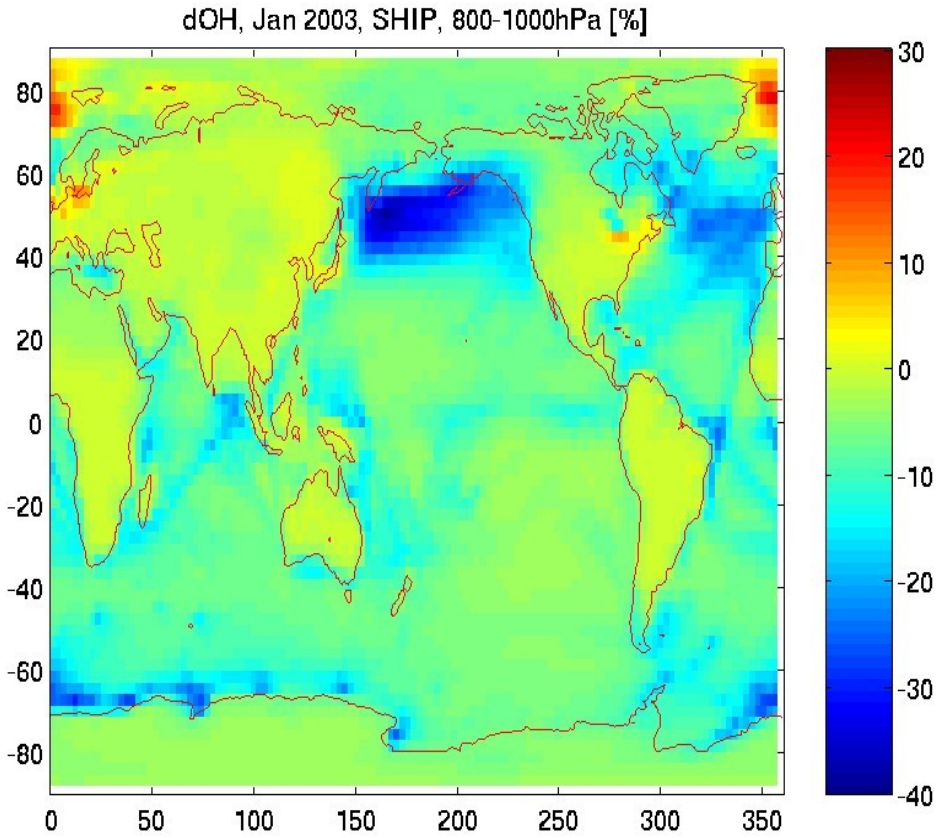

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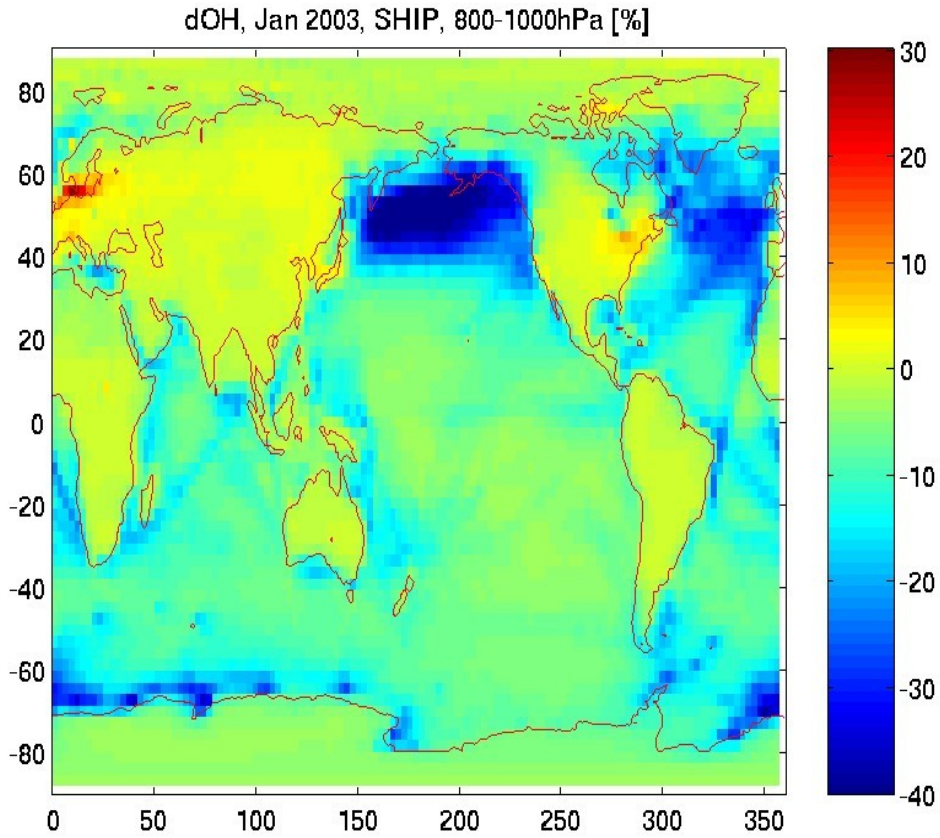

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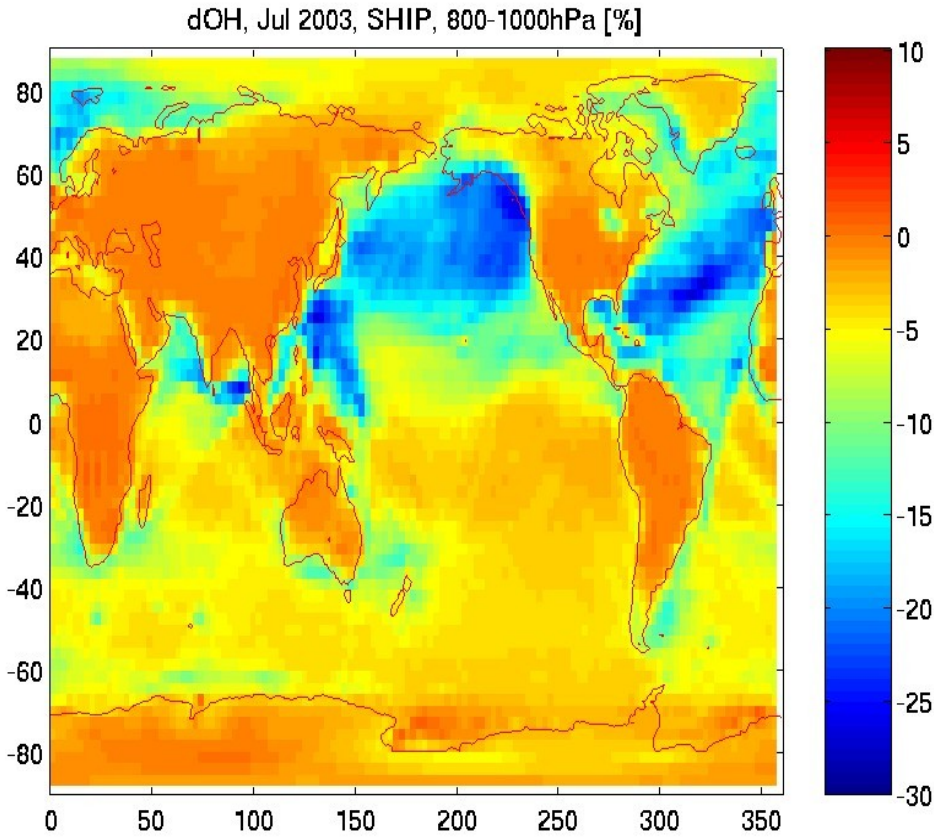

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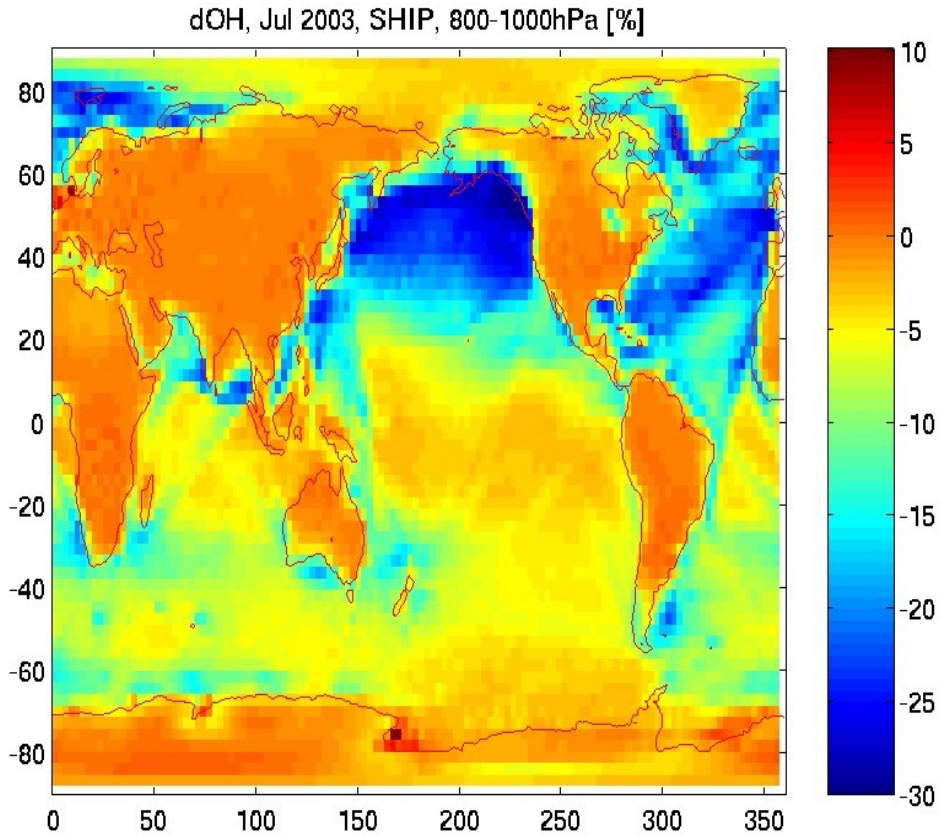

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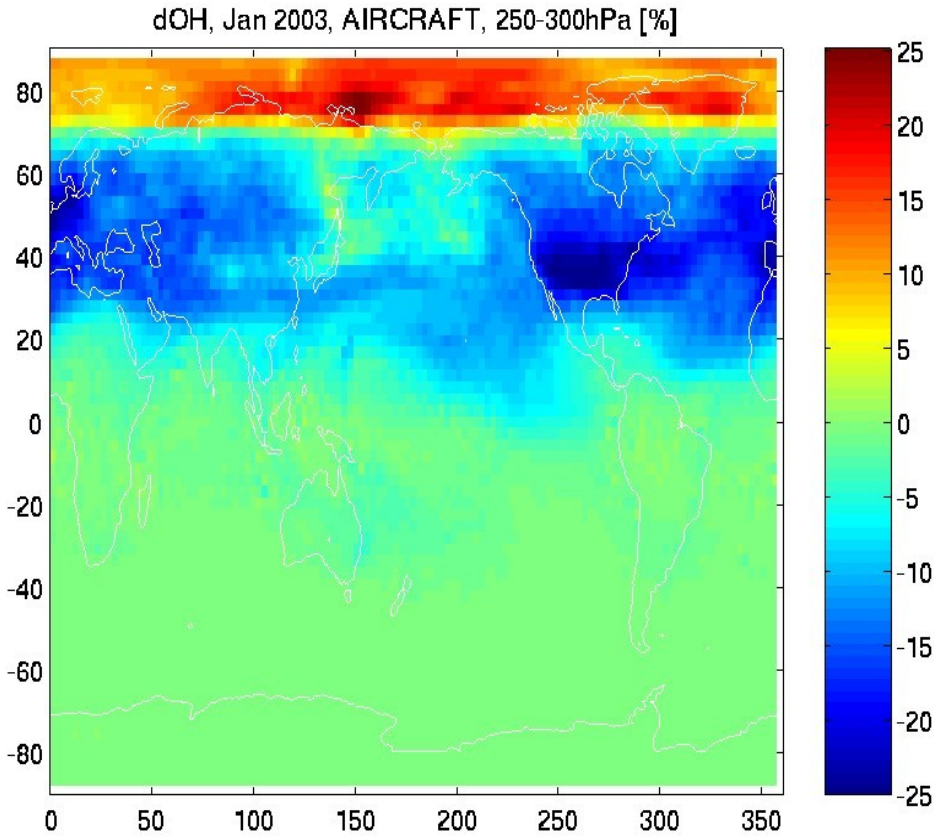

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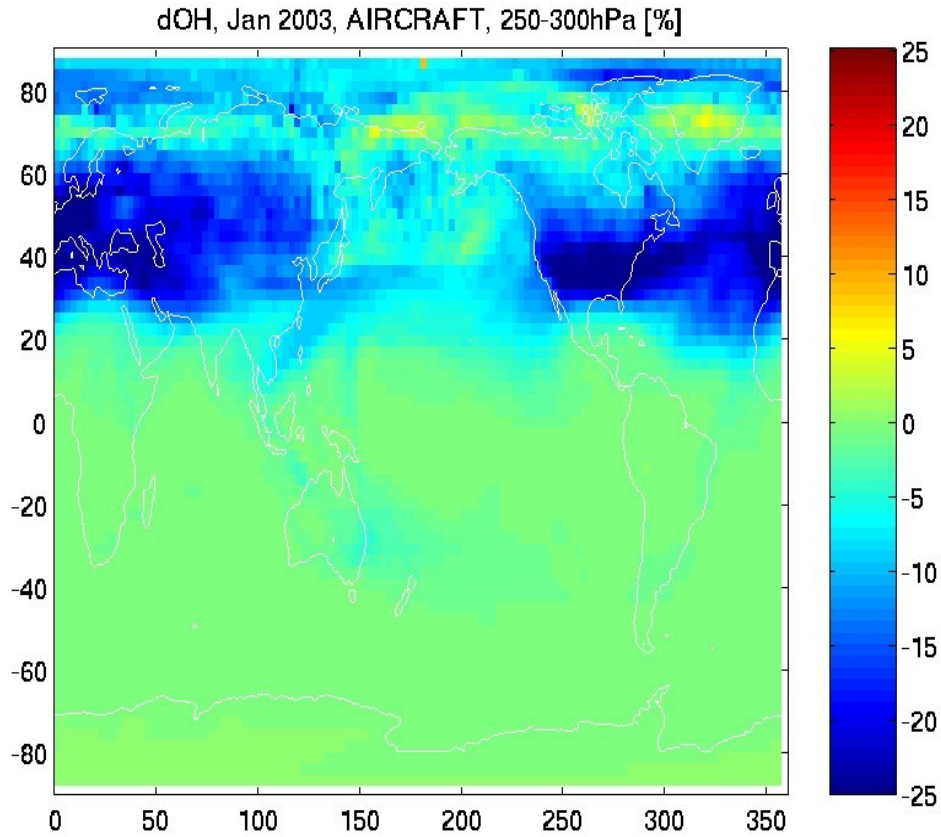

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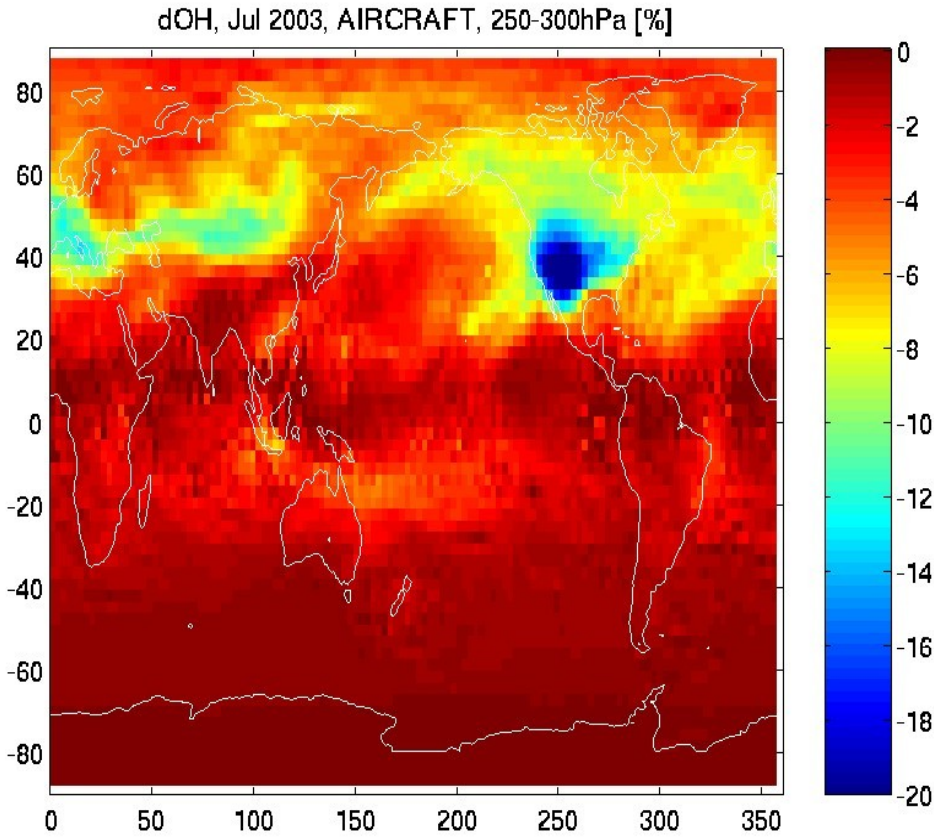

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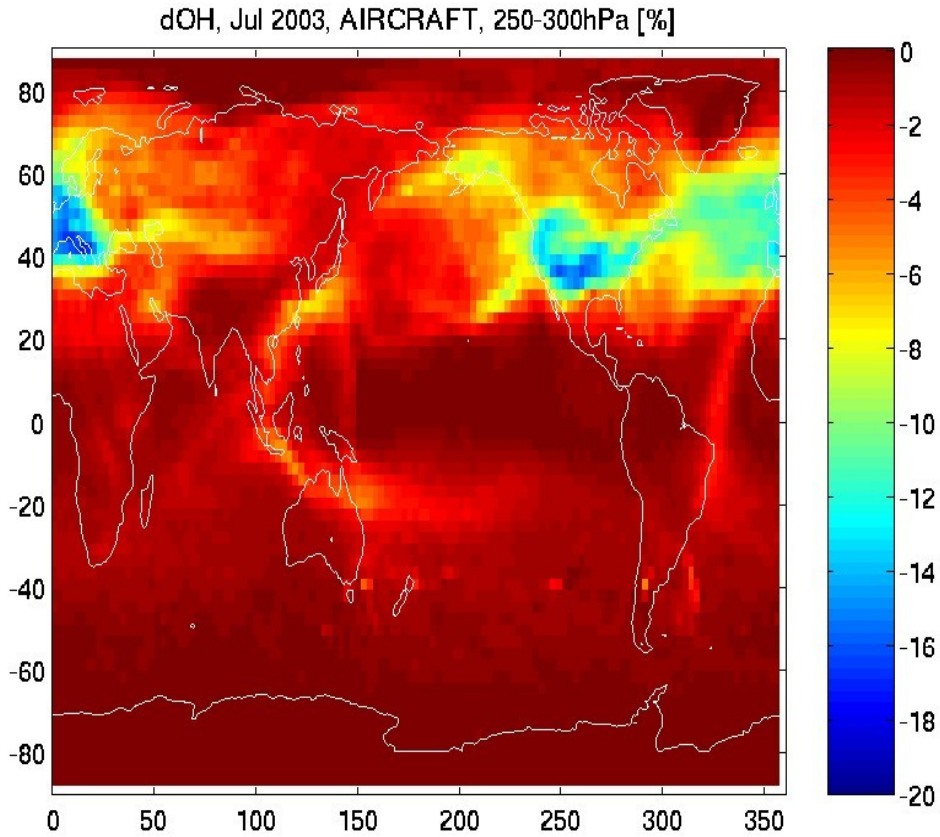

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Conclusions

- Tropical tropospheric O3 concentration is ~20% less in UCI CTM than in Oslo CTM2 (maybe due to scavenging).
- Dark chemistry over North Pole need better understanding.