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Using analyses of chemical tracers to evaluate analyses of wind fields in the stratosphere

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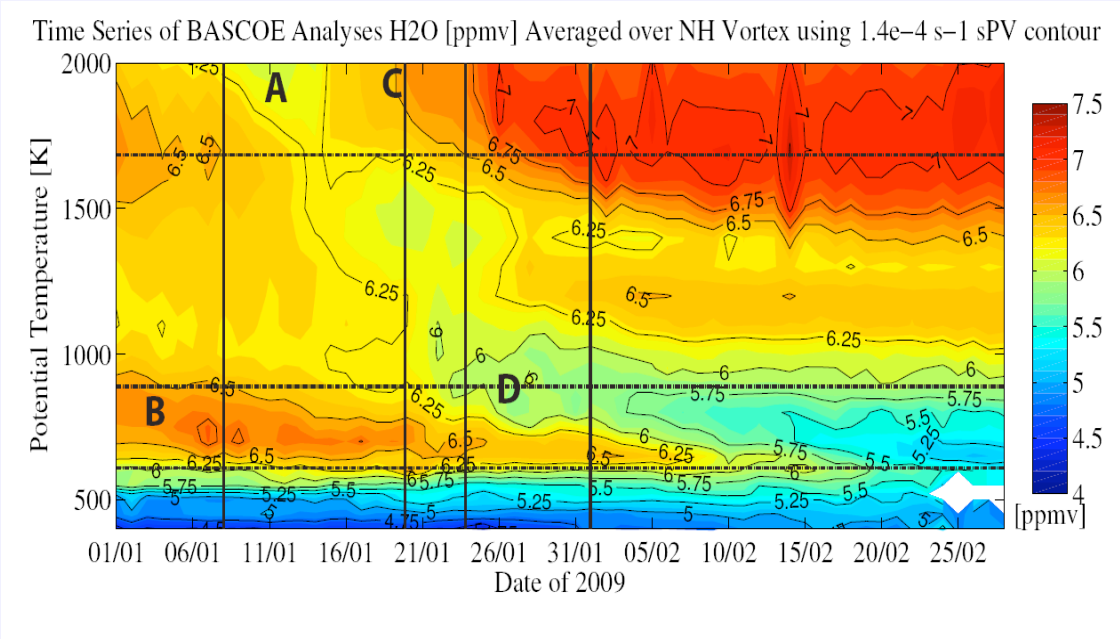
The idea

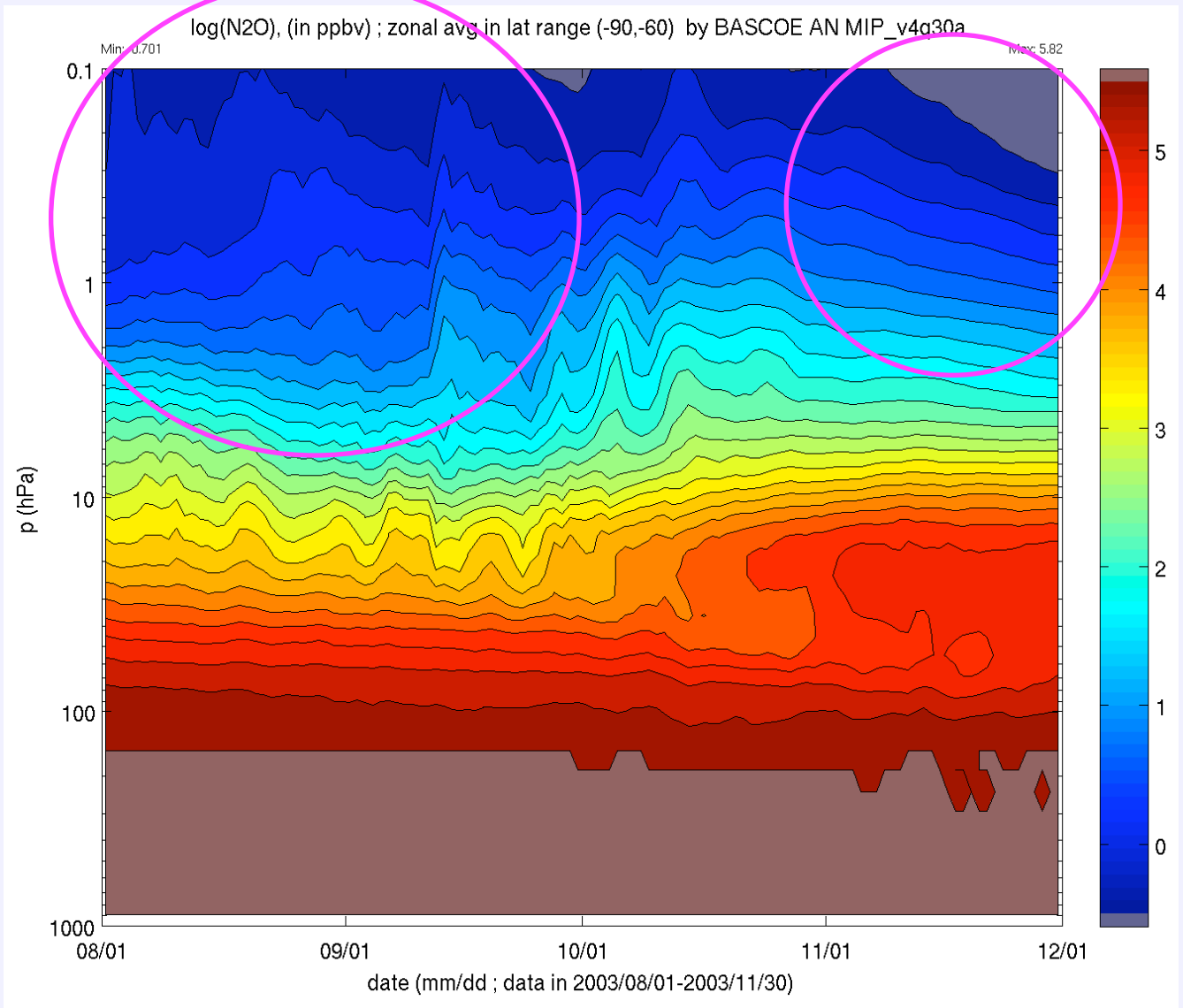
Chemical analyses of stratospheric tracers (using limb-scanning satellite obs) have been used to investigate dynamics in the polar stratosphere – especially descent rate in polar vortex.



Lahoz *et al.*, ACP, 2011

These analyses are based on CTM which are driven by wind fields (e.g. ERA-interim). Let us apply to the CTM output the same diagnostics as to the chemical analyses. Could the differences allow us to evaluate the quality of the wind fields themselves?

N2O analysis of MIPAS by BASCOE



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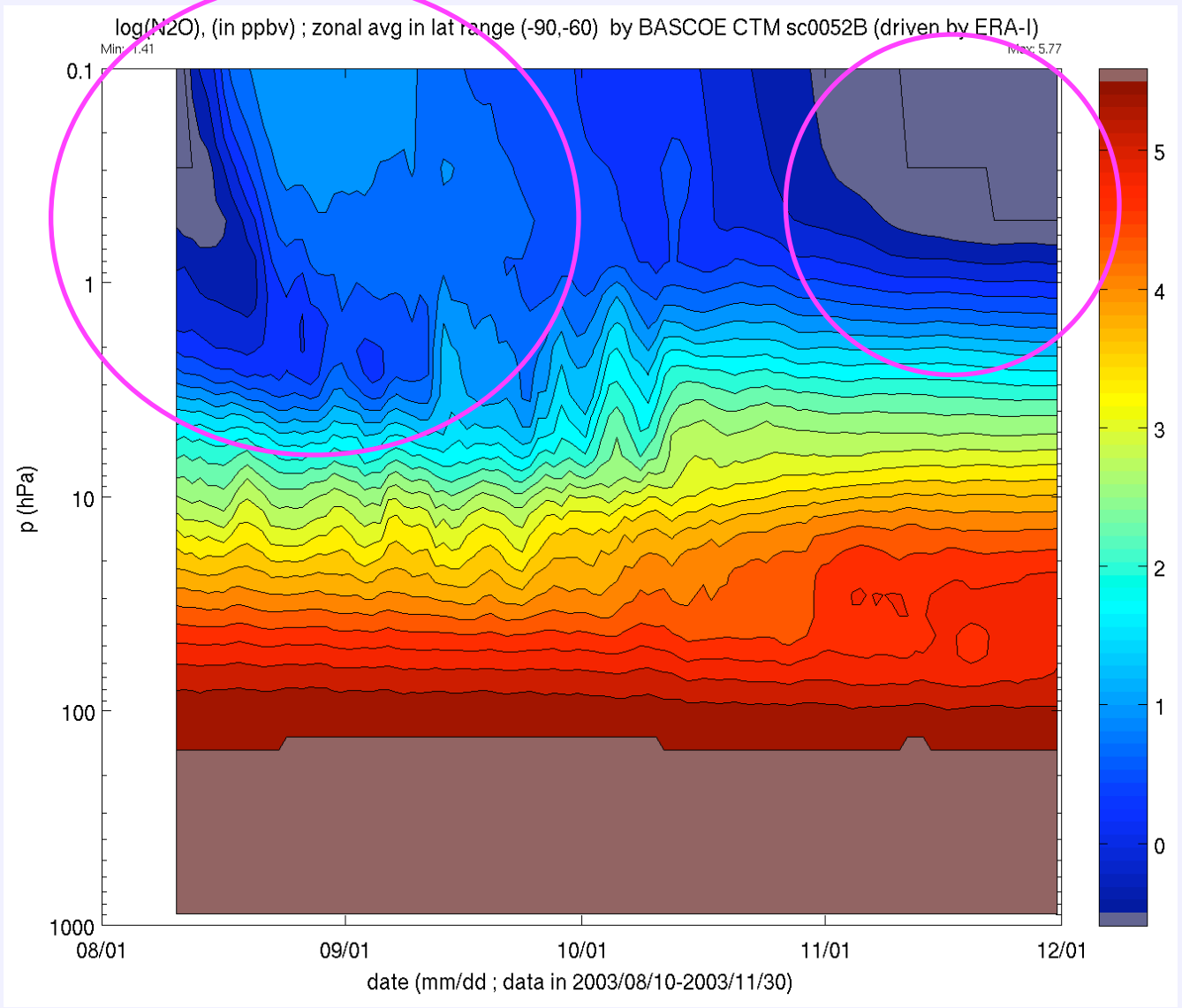
BASCOE CTM driven by ERA-Interim



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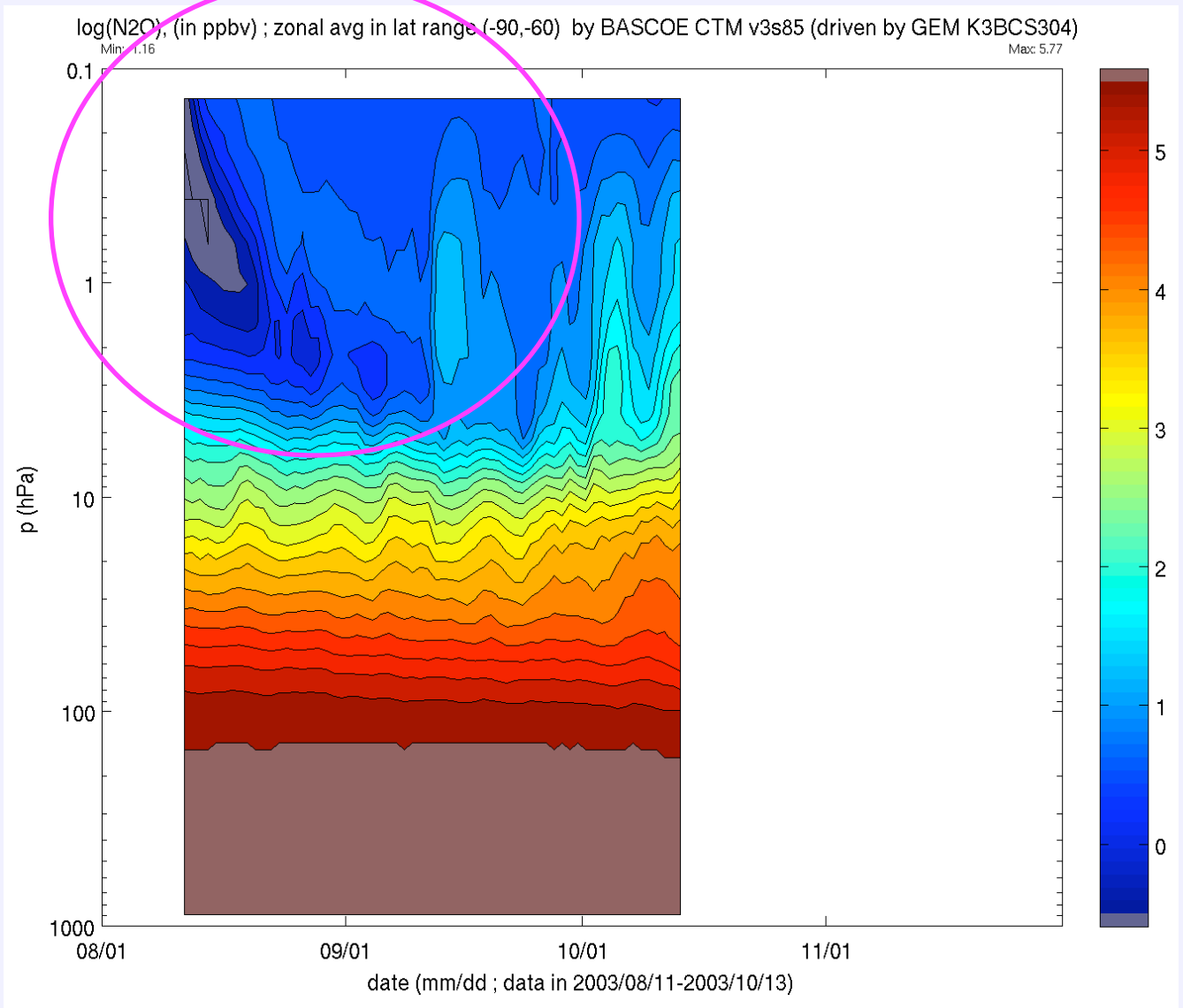
BASCOE CTM driven by GEM 3D-VAR



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