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# ***Interactive comment on “Water vapour profiles from SCIAMACHY solar occultation measurements derived with an onion peeling approach” by S. Noël et al.***

**Anonymous Referee #2**

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The paper presents and describes a simple retrieval method to derive water vapor profiles from SCIAMACHY limb occultation measurements. This method is based on an onion peeling approach with a modified DOAS (Differential Optical Absorption Spectroscopy) fit. But to kept this method simple intentionally, the radiative transfer calculation is not performed in details and correction factors are applied a posteriori. The method and its advantages are well described and an effort for the comparison of the present results with other retrieval works (but with other satellite measurements). However, a detailed error analysis/budget and assessment of precision and accuracy is clearly missing.

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Specific comments: Introduction p205: confusion is made between Optimal Estimation and Global fit approach (which is not mentioned in the text). Actually OE and onion peelings are not opposite (and it's possible to develop and OE based on onion peeling approach). The text must be clarified and the global fit approach must be mentioned [reference: Massimo Carlotti, "Global-fit approach to the analysis of limb-scanning atmospheric measurements," Appl. Opt. 27, 3250-3254 (1988)] Fig 2. is difficult to read, please coarsen lines the curves. Fig 3. Please grow the symbols in the upper panel.

Interactive comment on Atmos. Meas. Tech. Discuss., 3, 203, 2010.

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