

Interactive comment on “Attenuation of concentration fluctuations of water vapor and other trace gases in turbulent tube flow” by W. J. Massman and A. Ibrom

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I found the comment by Tim Griffis very interesting. According to Bill's model, heavier isotopes should interact less with the wall (still in conflict with data though), given lower molecular diffusivity and constant wall effects. If these were affected by polarity, it should be possible to estimate whether a molecule containing isotope is more or less polar. So, if H₂O isotopes would travel longer perpendicular to the flow through the laminar layer and the wall effects would be less strong, isotope fractionation would be more likely. Finally, we pointed to an apparent weakness of the model, but I'd also like to emphasize here that experimental evidence is very small in this area. We need

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more than only one or two experiments trying to falsify Bill's model, especially those experiments that test wall and flow effects separately from each other.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 9819, 2008.

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