

Interactive
Comment

Interactive comment on “Relating tropical ocean clouds to moist processes using water vapor isotope measurements” by J. Lee et al.

Anonymous Referee #2

Received and published: 27 September 2010

Review result for Lee et al., titled “relating tropical ocean clouds to moist processes using water vapor isotope measurements.” Since TES isotope data is significantly influenced by cloud existence and type, this study classified the data into 4 cloud types, and tried to interpret the data in each case. This kind of effort is indeed necessary and important. However, before acceptance as a full article, I would like the authors to elaborate more. First of all, the manuscript’s explanations on the key processes are very hard to follow. Schematic figures **MUST** be added for each cloud type. There are some minor issues below.

Table 1: Is it valid to show the number of lower sensitivity data? (Specifically, BLC and PC data for 850-500 hPa)

Figure 1: What are the multiple lines in the same colors?

C8013

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



Figure 2: Latitude/Longitude information should be added. Is this a snapshot? If so, the date should be specified.

Figure 3: Time information should be specified in the caption. Why COD/CTP and H₂O/dD have different sampling frequencies? How can the reader know about the cloud types during this time series?

Figure 4: Is it a snapshot? Seasonal mean for a single year? Climatology? Please clarify.

Abstract: It has been told by many that the vapor-dD relationship is controlled by not only Rayleigh process but also other non-Rayleigh processes, but none of them has quantified the significance. Is it still impossible in this study?

P17412 top: What is the unit of COD?

P17414 bottom: Why do the ranges of the lines in Fig 1e-h link to the sensitivity? What is the each single line in the figure 1e-h? What is difference between error and sensitivity in this context?

P17415 middle: What is “step-and-stare”? Describe.

P17416 middle: “less than 0.1” -> No COD data is less than 0.1 in Figure 3.

P17419 bottom: “The first distribution is for comparison against...” -> I don't see any clear sky and non-precipitation cloud distributions in the figure 6.

P17420: This explanation is particularly hard to follow. At top, it reads “well explained by local mixing”, but at middle, it reads “due to less frequent mixing”. Which is true? I may misunderstand it, but to avoid such misunderstanding, it'd be better for the authors to make the explanation easier. Using schematic figures is absolutely necessary.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 17407, 2010.

[Full Screen / Esc](#)[Printer-friendly Version](#)[Interactive Discussion](#)[Discussion Paper](#)