

Interactive comment on “Influence of changes in humidity on dry temperature in GPS RO climatologies” by J. Danzer et al.

Anonymous Referee #2

Received and published: 1 July 2014

This paper is a clear response to an interesting scientific question. The motivation, method, results and conclusions are clear and concise. I recommend that it should be published subject to minor revisions and clarifications.

Scientific points

P5467, L25-26: Do the authors have any idea why the seasonal variation is more pronounced in the Northern Hemisphere?

P5469, L5ff: Might a meridional mean show this information more clearly than a table?

P5469, L14: Suggest replacing "No temporal pattern" with "No strong temporal pattern".

C1470

P5469, L18: How do Figs 4 and 5 show "longitudinal variations of water vapor were small"? Don't Figs 3-5 show that the Indian monsoon, which is localised in longitude as well as latitude, has a rather large effect?

P5471, L12ff: Is it worth stressing the strong statement that "at low altitudes the trends in dry temperature become negative, since the increase in water vapor overcompensates the moderate increase in physical temperature"?

P5471, L21: Perhaps amend line to read "... of about 14% if Tdry were used as a proxy for T"?

Typographical/syntactical points

P5460, L18: "comparably large". Do the authors mean "noise as large as the signal", or "relatively large"? Perhaps just omit the word.

P5462, L25: "gains of importance" → "gains in importance".

P5463, L24: Maybe spell out $N = 1e6(n-1)$?

P5465, L5: "allowed" → "allowed us" or "allows us".

P5465, L20: "shows to be" → "can be shown to be" (or simply "is").

P5467, L10: "smaller than -6K". Maybe "larger in magnitude than 6K"? The casual reader might not realise that "smaller than -6" actually means a bigger effect. (If the authors had defined Tdiff to be the positive quantity T-Tdry these sorts of ambiguities of language would not have arisen.)

P5467, L14: "contourlines" → "contour lines" or "contours".

P5468, L7 (and elsewhere): "dependance" → "dependence".

P5472, L3: Suggest replacing "a safe estimate down to which altitude" by "a safe estimate of the altitude down to which".

P5483,5484: Thank you for replotting the data on two Figures.

C1471

P5485, Fig 6: Very nice - tells a complicated story clearly.

P5488, Fig 9 caption: "dry an physical" → "dry and physical".

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 5457, 2014.

C1472