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Interactive comment on “Technical Note: Novel method for water vapor monitoring using wireless communication networks measurements” by N. David et al.

Anonymous Referee #1

Received and published: 3 August 2008

General Comment

The paper presents a straightforward method for extracting humidity information from standard microwave links of the wireless telecommunication network, and shows some results of its application. Considering that a network of microwave links of commercial cellular communication exists in most countries, it is amazing why this has not yet been extensively exploited to get humidity information of the lower atmosphere. Therefore, this paper is an important and interesting contribution to the meteorological community.

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Specific Comments

p 11677, l 15/16: I did not understand at all what you mean by "Assuming moist air A_o is negligible ..." until I realized (reading the sentence for the 3rd time) there is a comma missing: "Assuming moist air, A_o is negligible ..." I'd even suggest "Assuming the air is moist, A_o is negligible..."

p 11677, l 24/25: You state that the attenuation A_w can be "assessed" from γ using Eq. (1) – well, Eq. (1) just states that $A_w = \gamma$ since A_o is neglected. So it is rather simply "equating" A_w with γ – or did I miss some details? The word "assess" suggests something more complicated than just $A_w = \gamma$, which confused me. To me, the key equation then is eq.(2) linking A_w with $N''(p, T, \rho)$ – so this is used in order to convert the measured attenuation γ into the water vapor density ρ .

p 11678, l 15, Eq. (7): On the right hand side, RH has to be divided by "100%"

p 11679, l 20/21: You state that "similar comparisons were performed for other links" – can you tell which ones, and how many?

p 11680, l 2: Only one signal is captured in 24 hours for these specific links – is this typical for such microwave links? This would give rather poor temporal resolution for humidity measurements, I think.

p 11680, l 5: "close by surface stations" - how close by (a few km, or less than a km?)

p 11680, l 7-18: In general, the results from the Ramla link match the station measurements much less well than the results from the Harduf link. Can you comment on that? Is the humidity gauge closer to the link here? (The maps in figure 1 do not suggest that.) In particular, on May 1 and on April 23, the discrepancy is almost as large as on May 6 (the case you discuss) but with opposite sign. Can you comment on that?

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Technical Comments

p 11674, l 21: Spell out "RMSE"

p 11675, l 17: Replace "although" by "while they"

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 11673, 2008.

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