

Reply and Clarification

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1. Reply

Sievering's comments (1987) are well taken and do not need an elaborate response. Only a misunderstanding in the second paragraph of the "Comments" needs to be clarified.

I did not criticize the rationale for separating the two groups of data. I only commented on the curious difference between the two groups of data, suggesting that this difference is not likely to be "geophysical". In fact, I believe that the first dataset presents noise which may be due to the low windspeed. The second dataset indicates information. No effort was made to explain this difference.

The last two paragraphs deal with the efficacy of micrometeorological techniques versus surface collection techniques. It certainly is desirable to have an accurate and efficient surface collection technique, but it will be difficult to verify without micrometeorological measurements. I expressed an opinion and I will stick with it until proven wrong.

2. Clarification

Several readers have complained that the first paragraph of section 2c in Businger (1986) is difficult to

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follow and needs clarification. The problem starts with the sentence: "Equation (2.14) implies that . . .", so that I have made an attempt to say more clearly what is meant starting at the same place in the text:

Equation (2.14) implies that for any concentration $c_0 \neq 0$ adjacent to the surface, the flux is toward the surface. Thus, this equation also implies that when no flux is present, $c_0 = 0$ as well as $\bar{c} = c_0 = 0$. However, it is possible to have no flux and still an equilibrium concentration $\bar{c} = c_0 \neq 0$, as may be the case for H_2O and CO_2 . To accommodate this case, (2.14) may be modified as follows: (Chamberlain, 1966)

$$v_{tc} = \frac{-F_c}{\bar{c} - c_0} \quad (2.14a)$$

where v_t is called the transfer velocity.

REFERENCES

- Businger, J. A., 1986: Evaluation of the accuracy with which dry deposition can be measured with current micrometeorological techniques. *J. Climate Appl. Meteor.*, **25**, 1100-1124.
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- Sievering, H., 1987: Comments on "evaluation of the accuracy with which dry deposition can be measured with current micrometeorological techniques." *J. Climate Appl. Meteor.*, **26**, p. 652.