Biogeosciences Discuss., 5, S284–S286, 2008
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Biogeosciences Discussions

Interactive comment on "Influences of observation errors in eddy flux data on inverse model parameter estimation" *by* G. Lasslop et al.

Anonymous Referee #1

Received and published: 1 April 2008

General comment

This paper is made of two parts. The first one focuses on the statistical characteristics of NEE measurement errors. The second one investigates how these errors affect model parameter estimation. The interest of the former is obvious for better use of such measurements, but the significance of the latter is weak. Indeed, model errors dominate the observation error budget for parameter estimation in this field, so that the study does not address the appropriate issue. Also note that the wording is often awkward from a statistical point of view.

Specific comments

Abstract, l.23: The statement is trivial, use 'illustrate' rather than 'show'

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p. 753, l.15, l.17, l.19; p. 760, l.19: model parameters may be inverted, but not models

p. 753, l.16: why is there no background term (or at least bound information) in the cost function?

p. 753, l.22-23: the classification has little significance from a statistical point of view because it mixes unconditional and conditional probabilities

p. 754, l.5: the statement is general and does not need a specific reference (or maybe a textbook)

p. 758: l.10: why is there no background term (or at least bound information) in the cost function?

p. 758: l.15: What happens if some parameters have values beyond plausible bounds at the minimum (e.g. unexpected negative values)

p. 760, l.19 until Eq. (7): I do not understand

p. 761, l.6: in that case the study is also of minor importance

p. 761, l.23: this is not consistent with the chosen statistical framework. The prior parameters should follow the prior error statistics

p. 762, l.20: this makes little sense. One may assume that some variable (like the NEE error) statistically behaves like a random variable. However, the more it is linked to other variables (like wind speed here), the less random it appears to be.

p. 766, l.2: one should not expect the opposite to happen

p. 766, l.10-14: I do not understand

p. 767, l.1: this naive statement could be avoided

p. 768, l.14: 'illustrates' rather than 'indicates'

p. 768, l.20: some methods already exist

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5, S284–S286, 2008

p. 769, l.7: this is no news

Technical comments

p. 756, l.11: typing error p. 759, l.14: typing error p. 759, l.23: typing error p. 761, l.18: typing error p. 763, l.17: typing error p. 765, l.4: Table 1 or table 4?

p. 767, l.22: typing error p. 767, l.24: typing error

Interactive comment on Biogeosciences Discuss., 5, 751, 2008.