Nonlinear Processes
in Geophysics
Discussions

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Interactive
comment

Interactive comment on "Idealized Models of the Joint Probability Distribution of Wind Speeds" *by* Adam H. Monahan

Anonymous Referee #1

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The manuscript is well structured, well written, and easy to follow. The contributions are clear.

The author makes use two joint PDFs, namely Weibull and Rice, to model wind speeds. These joint PDFs are validated and compared using field measurements. The conclusions are crystal clear. The author asserts that although Rice is more flexible than Weibull, the latter is mathematically more easily tractable. The author is unquestionably correct. On the other hand, I would like to call the attention of the author for another joint PDF that gathers a number of interesting features that may be useful for this application. This is the alpha-mu distribution [R1]. The alpha-mu joint PDF [R1, Eq. 28] contains the same number of parameters as the Rice one, encompasses Weibull as a special case (therefore, more flexible than it), and is mathematically as tractable

as Weibull. I believe the use of alpha-mu model will substantially increase the reference value of this manuscript. This is just a suggestion, which I will leave for the author and the Editor to decide to implement it or not.

On the cosmetic side, the author should have a look at the different font sizes appearing in Eqs. 17-21, 26-28, etc. (wherever the variable u_bar shows).

[1] M. D. Yacoub, The alpha-mu Distribution: A Physical Fading Model for the Stacy Distribution, IEEE Transactions on Vehicular Technology, Vol. 56, no. 1, pp. 27-34, January 2007.

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