Nonlin. Processes Geophys. Discuss.,
https://doi.org/10.5194/npg-2018-16-EC2, 2018

Nonlinear Processes in Geophysics
Discussions

Interactive comment on "A Statistical Mechanical Approach for the Parametrization of the Coupling in a Fast-Slow System" *by* Gabriele Vissio and Valerio Lucarini

JM Lopez (Editor)

lopez@ifca.unican.es

Received and published: 24 May 2018

While I consider the revised paper has improved a lot in readability and the mathematical details now given are very useful, I also think, and concur with the referee on this, the manuscript can widen its audience by paying further attention to the point 1 made by the referee in his/her first report.

The referee rightly pointed out in his/her first report that there is some mismatch between the introduction, where the authors allude to the problem in atmospheric modelling regarding parametrizing phenomena at small SPATIAL length scales while the actual content of the paper deals with parametrizing processes at short time scales

with no spatial resolution involved whatsoever. I agree with the referee that it would make it more appealing to the climatologist a brief discussion on how this method could potentially be helpful or extended to the actual problem that climate modellers try to solve, i.e., the parametrization of short spatial scales phenomena that drive long scale physics. I wonder if the authors may foresee an extension of their method to this question and could include some discussion on this. Or, on the contrary, why this is irrelevant, if that is the case.

I would also suggest the authors to keep the original title of the paper, mentioning the Wasserstein distance in the title is perhaps too technical for a title (?). This is of course optional and up to the authors to reconsider.

Interactive comment on Nonlin. Processes Geophys. Discuss., https://doi.org/10.5194/npg-2018-16, 2018.