Nonlinear Processes in Geophysics Discussions

Nonlin. Processes Geophys. Discuss., community comment CC1
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# Comment on npg-2021-24

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Community comment on "Control simulation experiment with Lorenz's butterfly attractor" by Takemasa Miyoshi and Qiwen Sun, Nonlin. Processes Geophys. Discuss., https://doi.org/10.5194/npg-2021-24-CC1, 2021

The topic of the paper seems to be the role of a forced response. From *Osipov, G. V., Kurths, J., & Zhou, C. (2007). Synchronization in oscillatory networks. Berlin: Springer,* it is known that a periodic forcing can reduce the erratic fluctuations and uncertainty of a near□chaotic response function.

This is an important path of research when one considers that natural climate is continually corrected by periodic forcing such as the daily signal, seasonal/annual signal, and the more complex tidal forcing. So that even with a weakly non-linear formulation, the response may not easily be decomposed but it also may not be chaotic. Thus, there may be hope in deconstructing seemingly erratic time-series such as ENSO.