

Interactive comment on “Data-driven prediction of a multi-scale Lorenz 96 chaotic system using deep learning methods: Reservoir computing, ANN, and RNN-LSTM” by Ashesh Chattopadhyay et al.

Anonymous Referee #1

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Summary: This is a very interesting paper that is certainly worthy of publication. I have attached a copy of the paper with my comments that were added by Adobe Acrobat. While I have a large number of comments, most of them are editorial or typographical. The authors should be able to address these easily. A few of my comments are more substantive and I provide a complete list of those below. Addressing any of the comments that fall into this category should not require the authors to carry out new numerical simulations or to do a major revision of the paper. I recommend that the paper be accepted subject to a minor revision.

1. Title and at many places elsewhere: Reservoir computing is not deep learning. I

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suggest using the term 'machine learning' rather than 'deep learning' in most places in the paper, including the title.

2) Equation 5: This equation and the related discussion, including Appendix A, should be fixed.

3) Equation 6 and 7: Introducing the dependent variable v is unnecessary. The two equations should be combined into a single one.

4) Line 170: You cannot use the same notation A for both the connectivity matrix and its normalized form.

5) Equation 8 and text above. You cannot use the notation $X(t+\Delta t)$ for two different quantities.

Please also note the supplement to this comment:

<https://www.nonlin-processes-geophys-discuss.net/npg-2019-61/npg-2019-61-RC1-supplement.pdf>

Interactive comment on Nonlin. Processes Geophys. Discuss., <https://doi.org/10.5194/npg-2019-61>, 2020.

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