

***Interactive comment on “Using an extended Kalman filter learning algorithm for feed-forward neural networks to describe tracer correlations” by D. J. Lary and H. Y. Mussa***

**D. J. Lary and H. Y. Mussa**

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Thank you for reviewing our article.

Although some readers may wish to skip the mathematics it is still important that a new algorithm is documented so that if others are interested they can implement it independently.

The neural network inputs used were  $\text{CH}_4$ , pressure, latitude and fractional time of year and the output was  $\text{N}_2\text{O}$ . The question may be asked, why was this example chosen since  $\text{CH}_4$  and  $\text{N}_2\text{O}$  are well correlated. The answer is that although it is true that they are correlated, the precise nature of the correlation changes with both altitude and time, so instead of requiring a whole family of correlations to describe these altitude and time variations a single neural network can be used.

Thank you again for your time and interest, it is appreciated.

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Interactive comment on Atmos. Chem. Phys. Discuss., 4, 3653, 2004.

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