

## ***Interactive comment on “Data assimilation of two-dimensional geophysical flows with a Variational Ensemble Kalman Filter” by Z. Mussa et al.***

### **Anonymous Referee #1**

Received and published: 1 April 2014

Page 13 line 15

Please refer to the paper:

X.Zou, I. M. Navon, M. Berger, K.H. Phua, T.Schlick, and F.X. Le Dimet: Numerical Experience with Limited Memory Quasi-Newton and Truncated Newton Methods, , SIAM Journal on Optimization, 3, No. 3, 582-608 (1993)

which is a basic L-BFGS paper in context of data assimilation.

Page 20, line 11:

Please refer to the paper :

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Y. Li, I. M. Navon, P. Courtier and P. Gauthier: Variational data assimilation with a semi-Lagrangian semi-implicit global shallow water equation model and its adjoint, Monthly Weather Review, 121, No. 6, 1759-1769 (1993)

This is relevant to the numerical scheme and the shallow water equations model.

Page 21 , line 5

Please refer to the paper:

I.M. Navon, Beny Neta and M. Y. Hussaini: A perfectly matched layer approach to the linearized shallow water equations models, , Monthly Weather Review , 132, No 6, 1369-1378 (2004)

This is relevant to non-reflecting wave at open boundaries.

### References

Page 27 line 16. Delete et al. You can complete the reference by adding:

Special Volume of Handbook of Numerical Analysis. R. Temam and J. Tribbia, eds. Elsevier Science Ltd, New York.

Once these minor corrections are carried out , this reviewer is prepared to recommend the paper for final publication.

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Interactive comment on Nonlin. Processes Geophys. Discuss., 1, 403, 2014.

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