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Enhanced ensemble-based 4DVar scheme for data assimilation. (English) Zbl 06893440
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Summary: Ensemble based optimal control schemes combine the components of ensemble Kalman filters and variational data assimilation (4DVar). They are trendy because they are easier to implement than 4DVar. In this paper, we evaluate a modified version of an ensemble based optimal control strategy for image data assimilation. This modified method is assessed with a shallow water model combined with synthetic data and original incomplete experimental depth sensor observations. This paper shows that the modified ensemble technique is better in quality and can reduce the computational cost.

MSC:

62-07 Data analysis (statistics) (MSC2010)

65C60 Computational problems in statistics (MSC2010)

76B15 Water waves, gravity waves; dispersion and scattering, nonlinear interaction

Keywords:

data assimilation; optimal control; ensemble methods; shallow water model; depth sensor

Software:

TAPENADE

Full Text: [DOI](#)

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