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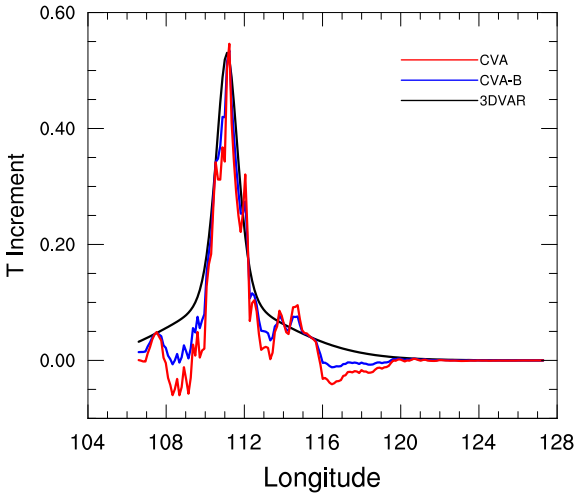
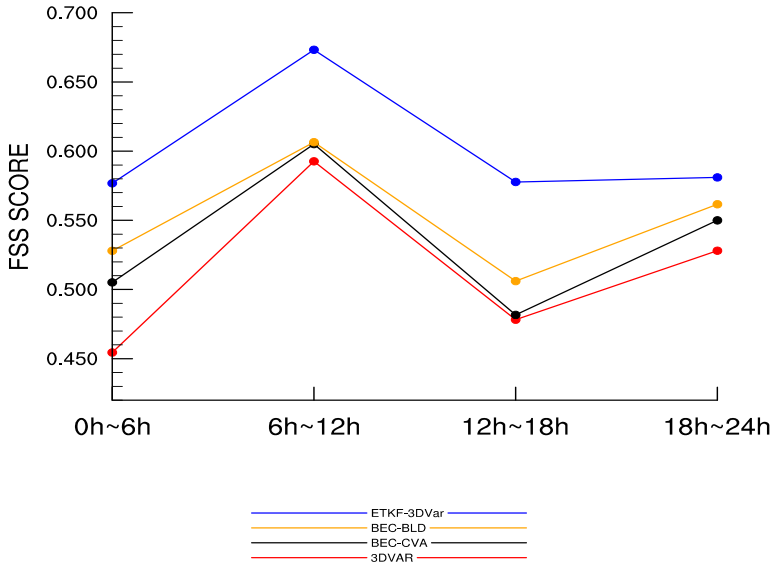



←Fig 1.The temperature increments (K) that go through the single observation point (32°N, 111°E) at the 21st level as a result of assimilating a single temperature observation. The weighting coefficient in BEC-BLD is 50% and the length scales is 200km.

↓ Fig2. The time series of averaged Fractions Skill Score (FSS) (Roberts et al. 2008) of 6h accumulated precipitation over the 3 weeks (with thresholds of 1 mm h-1). Red line denotes 3DVar, black line denotes BEC-CVA, orange line denotes BEC-BLD, blue line denotes ETKF-3DVar.




- The benefits of using a blending approach (BEC-BLD), which combines a static, homogeneous BEC and an inhomogeneous and anisotropic BEC, are assessed by conducting single observation assimilation experiments and continuous-cycling data assimilation and forecasting experiments covering a 3-week period.
- Single observation experiments indicate that the noise in the increments in the extended alpha control variable approach (BEC-CVA) can be somehow reduced by using BEC-BLD(Fig.1), while the inhomogeneous and multivariable correlations from BEC-CVA are still taken into account.
- The FSS of 6h accumulated precipitation over the 3 weeks show that BEC-CVA and BEC-BLD outperform the use of 3DVar. BEC-CVA and BEC-BLD underperform ETKF-3DVar, as expected.