**Ocean Science
Discussions**

Interactive comment on "Application of a hybrid EnKF-OI to
ocean forecasting" *by* F. Counillon et al.

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This is an interesting paper taking ideas from atmospheric numerical weather prediction and applying them to oceans. Unfortunately references to the current state of play in atmospheric hybrid data assimilation methods is lacking. In particular important papers including theoretical studies by Lorenc (QJR Met Soc; 2003; 129, 3183) and operational implementations by Buehner (QJR Met Soc; 2005; 131, 1013), Wang et al (Mon. Wea. Rev.; 2008, 136, 5116: 136; 5132) among others are not mentioned . The claim that the paper presents "the hybrid covariance methods are applied for the first time to a realistic application i.e. assimilating real observations, and thus applicable in an operational setting" is over stating the case particularly given hybrid methods are in pre-operational trials in a number of atmospheric NWP centers. An unresolved issue

is how can balance be preserved when using a Gaspari & Cohn (1999) Shur product localization scheme?

Interactive comment on Ocean Sci. Discuss., 6, 653, 2009.