Interactive comment on "An efficient training scheme that improves the forecast skill of a supermodel" *by* Francine Schevenhoven and Frank Selten

Anonymous Referee #1

Received and published: 19 February 2017

The authors present a novel approach to multi-model ensemble generation they term "cross pollination in time". The approach is new to me but seems to derive from the earlier work of Smith (2001) and the recent study of Du & Smith (2016). CPT is first illustrated by application to the L63 three component system and then applied to the simple quasi-geostrophic atmospheric model of Marshall & Molteni (1993). The results show that the approach is indeed effective and more encouragingly that inclusion of even a poorly performing model improves the forecast of the supermodel solution. In addition it seems obvious that the approach can be applied generally and in particular to GCMs.

My main criticism is that the method (section 2) is very short and lacking in detail.

Although I can se how to do it, it is not clear exactly how the supermodel weights are calculated or the criteria by which convergence is determined. Given the brevity of the article a bit more technical detail is warranted.

Overall the paper is very well written and clearly articulated. The content is novel and the method promising. Therefore I recommend acceptance after minor revision to more clearly articulate the technical aspects of the approach.

Interactive comment on Earth Syst. Dynam. Discuss., doi:10.5194/esd-2017-6, 2017.