



## **Synchronization Experiments With A Global Coupled Model of Intermediate Complexity**

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In the super modeling approach an ensemble of imperfect models are connected through nudging terms that nudge the solution of each model to the solution of all other models in the ensemble. The goal is to obtain a synchronized state through a proper choice of connection strengths that closely tracks the trajectory of the true system. For the super modeling approach to be successful, the connections should be dense and strong enough for synchronization to occur.

In this study we analyze the behavior of an ensemble of connected global atmosphere-ocean models of intermediate complexity. All atmosphere models are connected to the same ocean model through the surface fluxes of heat, water and momentum, the ocean is integrated using weighted averaged surface fluxes. In particular we analyze the degree of synchronization between the atmosphere models and the characteristics of the ensemble mean solution. The results are interpreted using a low order atmosphere-ocean toy model.