Time-dependent slow manifold and pullback attractor in the primitive equations

M. D. Chekroun (1,2), F. Di Plinio (3,4), N. Glatt-Holtz (3,4), R. Temam (3,4), and D. Wirosoetisno (5)

(1) CERES-ERTI, Ecole Normale Supérieure, Paris, France, (2) Atmospheric and Oceanic Sciences and IGPP, UCLA, USA, (3) Mathematics, Indiana University, Bloomington, IN, USA, (4) Institute for Scientific Computing and Applied Mathematics, Indiana University, Bloomington, IN, USA, (5) Mathematical Sciences, Durham University, UK

We consider the ocean primitive equations with slow, time-dependent forcing.
We investigate the existence of the pullback attractor and how it is related to the (time-dependent) slow manifold when the Rossby number is small.