

Observational Seminar, Fall 2015
 Instructor: Matthew Alford
 Time: Fridays 12-1.

This quarter's topic is "Lifecycle of the ocean's mesoscale field." The mesoscale field contains a vast amount of kinetic energy, and it is well known that it arises from baroclinic instability of the general circulation to the tune of about 1 TW of power, but oddly how that power dissipates isn't well known (we have a good idea of several mechanisms that are likely responsible, but not their relative importance). So we'll review observations (and a little theory) of the birth, life (structure, propagation) and death of the mesoscale field, and implications.

Class #	Date	Topic and suggested papers	Extra reading
1	Friday Sep 25	No class	
2	Friday Oct 2	Introduction	Ferrari and Wunsch (2009) (at least sections 5.2, 5.3)
3	Friday Oct 9	Generation 1: Scott and Wang 2005	von Storch et al (2007), Gent and McWilliams (1990), Wunsch (1998)
4	Friday Oct 16	Generation 2/Structure 1: Cronin/Watts (1996)	
5	Friday Oct 23	Structure 2: Chelton et al 2011	
6	Friday Oct 30	Structure 3: Wunsch 1997 or Chaigneau et al (2011)	Timmermans et al 2008, Armi et al 1989
7	Friday Nov 6	Dissipation 1: Bottom drag. Gille et al 2000, Sen et al.	Scott et al 2011., Arbic et al (2009).
8	Friday Nov 13	Dissipation 2: IW radiation. Alford et al (2013)	Buhler and McIntyre, Polzin 2010, Nagai et al 2015
9	Friday Nov 20	Dissipation 3: Frontogenesis. D'Asaro et al (2011)	Thomas/Lee 2005
10	Friday Dec 4	Dissipation 4: Lee waves/W. Boundary. Clement et al 2016.	St. Laurent et al, Zhai et al 2010