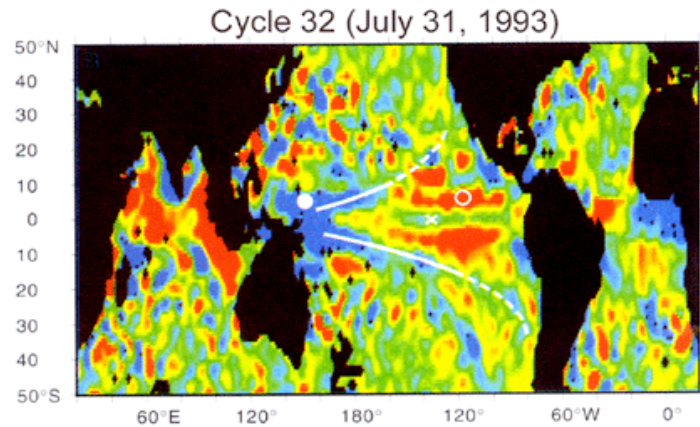
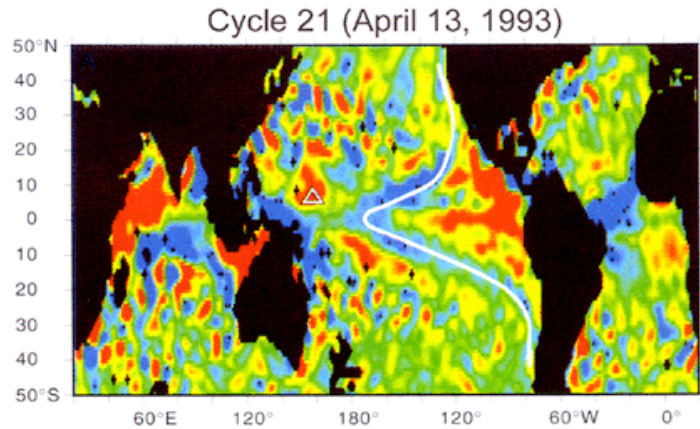


Dynamical Oceanography
GG/ES507
Spring 2010: Tu, Th: 3:30-5:00

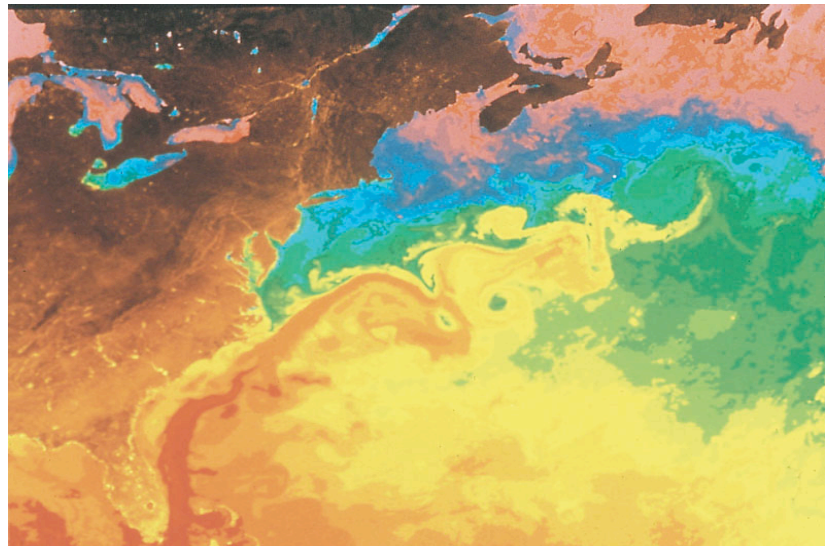
Professor: Bruce T. Anderson
Room 460 Stone Science Building
Phone: 617-353-4807
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Course Description:

This course provides a quantitative introduction to the physical ocean system and its impact on the environment. The course content consists of three main topical areas. In the first section we will cover the properties of seawater and water mass formation, the equations of motion for fluids on a rotating planet, and the role these processes play in producing large-scale ocean circulations. In the second section of the course we will examine boundary currents and the circulations in the deep ocean. In addition, we will look at waves in the ocean from the smallest scales (gravity waves) to planetary scales (tides). In the final section of the course, we will examine the nature of climate variability with a particular eye towards the role coupled ocean-atmosphere interactions play in producing variability on interannual to multi-decadal (and longer) time-scales. At the end of the semester, you should have a basic understanding of the dynamics of the ocean system on many scales and how these can change with time and location.



Westward propagation of large-scale (~100km) waves across the Pacific. These waves are the result of interactions between the rotation of the earth and force of gravity and can influence changes in climate on global scales.



Meanders in the Gulf Stream resulting from the strong temperature difference north and south of the Gulf Stream. These “meanders” are similar to the atmospheric phenomena that produce storms here in New England