

ATOC 513: Waves and Stability

The course covers a variety of wave types and instability mechanisms that are fundamental to atmospheric and oceanic dynamics. Most of the topics covered make simplifying assumptions that are rarely valid in realistic settings; however, the course also discusses how these linear wave and stability mechanisms give insight into the dynamics of more complex nonlinear flows. By the end of the course, students should have enough familiarity with standard classic problems in geophysical fluid mechanics so as to be able to engage in a research level discussion in a topic of interest in this field.

Course Outline

1. Review of basic concepts
 - (a) Linear plane waves, phase and group velocity

