

A & O SCI 216B
Wave Motions in the Tropical Atmosphere
Spring 2009

Instructor: Prof. Kristen Corbosiero, MS 7149, 310-825-1751, kristen@atmos.ucla.edu

Class hours: Tuesday/Thursday 12:30 – 1:45 PM in MS 7124A
No class Tuesday April 21st, Tuesday June 2nd, and Thursday, June 4th
Possible jury duty the week of April 27th

Office hours: Tuesday/Thursday 2 – 3 PM and by appointment

Class web site: <http://ccle.ucla.edu/course/view/09S-AOSCI216B-1>

Class format: During the first ~5 weeks of the quarter, I will lecture about the basic structure and dynamics of tropical cyclones, at the conclusion of which there will be a midterm exam (30% of your grade). After the exam, we will review a selection of seminal and current papers on topics that you will have a hand in selecting. You will present one of these papers in class as 30% of your grade. The final 40% of your grade will be comprised of an in class presentation (20%) and short paper (10 pages maximum; 20%) discussing the results of a class project that can be a literature review or small research project on some aspect of tropical cyclones.

Exams & Presentations: Midterm – Tuesday, May 5th (In class)
Paper presentations – May 14th – 28th (pick your day and let me know)
Final project presentations – During Finals week, date/time TBD

Topics:

- Basic tropical cyclone structure and necessary development conditions
- Surface fluxes
- Equations of motion in cylindrical coordinates
- Angular momentum budget
- Inertial instability and outflow jets
- Eliassen balanced vortex equation
- Kinetic and available potential energy budgets
- CISK vs. WISHE
- Houze (2009) review paper “Clouds of Tropical Cyclones”