ATM255: Numerical Modeling of the Atmosphere

Fall 2008

Professor:  Shu-Hua Chen

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Class room                   HH124

Class time:                    W/F 2:10-3:20 pm

Lab time:                      W/F 3:30-5:00 pm

Office hour: T/R            11 am - noon

Grading:

            Examines:         40% (midterm and final 20% each)

            Homework:      20%

            Lab:                 10%

            Projects:           30%  (including presentation and report)

                        (decide project topics before Oct 3)

           

  The grads may be adjusted based on the class performance.

  Homework is due at the class time (right at the beginning of the class).  No late homework will be accepted without a reasonable excuse (such as illness).

Contents:

1.      Introduction

2.      Governing Equations

3.      WRF model

4.      Physics Parameterization

5.      Coordinates, Grid Structure, and Map projection

6.      Numerical Methods and Stability Analysis

7.      Solutions of Linear Algebraic Equations

8.      Data Assimilation

Reference:

Dale R. Durran, 1999: Numerical methods for wave equations in geophysical fluid dynamics