

# MESOSCALE METEOROLOGY

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METR 4433

Term Project  
Assigned: Mar. 10, Due: Apr. 30

Spring 2015

## Schedule

- Tuesday, March 10: assigned
- Tuesday, March 31: half to one page proposal due
- Thursday, April 30: final paper due

## Guidelines

In this term project, you will read research papers and/or reports (*e.g.*, AMS journal articles) on a subject of mesoscale meteorology selected by yourself (with the help of the instructors if needed), and write a review on the subject. The article should be 10 to 15 pages long, double spaced, including references and figures. The number of pages for figures should not exceed 1/3 of the total number of pages. You are encouraged to include your own critical views on the subject in your review. Original research and topics different from those covered in the lecture are encouraged.

The AMS Manuscript Guide on the convention, formatting, units etc., should be followed.

- <http://www2.ametsoc.org/ams/index.cfm/publications/authors/journal-and-bams-authors/journal-and-bams-authors-guide/>

The paper should include a short abstract, an introduction, the main body (which can have one to several sections), and summary and/or conclusion sections. This term project accounts for 30% of your total score.

The review should demonstrate a good understanding on your part of the chosen subject. It should use your own words in summarizing the views and understandings. It *should not* directly copy paragraphs or sentences from other people's paper or article. Be sure to acknowledge and cite all references used to help formulate your paper.

The paper will also be graded based on the perceived understanding by you on the topic, as well as on its organization, clarity, grammar, completeness, and neatness. All figures should contain numbered captions of your own, and the figures should be arranged (either at the end or inserted into the text) in the order they are referenced in the text.

The following aspects will be considered when grading your paper:

- Are the materials well organized and is the flow logical? Does the introduction clearly state the purpose and/or motivation of the review? Does the paper have a proper and informative title? Are proper headings used for the sections?
- Are the paper and presentation clear and easily understandable? Can other students learn anything from your review if they are to read it?
- Are figures appropriate and effective in supporting the text in the paper? Do they have adequate captions and are they adequately discussed? Are the figures and tables numbered consecutively? Are tables and figures appropriately referenced in the text?
- You should avoid choosing the same topic as your capstone project. A modified version of your capstone report (we will be able to find out if you do so) is not acceptable. Some what related topics, perhaps looking at different aspects of a problem, is okay.

### **Example Topics**

Potential topics include, but are not limited to,

- Low-level jet
- Dryline
- Convective initiation
- Convective boundary layer, mixed layer
- Cloud streets
- Boundary layer rolls and eddies
- Land or sea breeze
- Valley flow
- Mountain waves
- Gravity waves
- Density Current
- Multicell storm
- Squall Line
- Tornado
- Supercell storm
- Mesocyclone
- Mesoscale convective system/complex
- Hurricanes
- Cold front
- Rainbands
- Downslope windstorm
- Orographic precipitation
- Instabilities
- Others