

## **Topics in Atmospheric Sciences: Cloud Dynamics**

Spring 2017

### Lecturer

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### Textbooks and References

1. Cloud Dynamics, 2nd edition, 2014, R. A. Houze, Jr., Academic Press, 496 pp.
2. Atmospheric Convection, 1994, K. A. Emanuel, Oxford University Press, 580 pp.
3. Storm and Cloud Dynamics, 2nd edition, 2011, W. R. Cotton, G. H. Bryan, and S. C. van den Heever, Academic Press, 809 pp.
4. Papers presented at Eighth Symposium on Aerosol-Cloud-Climate Interactions, 2016, American Meteorological Society.
5. Classical and recent journal articles on cloud dynamics

### Grading

presentation: 40%

participation in scientific discussion: 20%

term paper: 40%

### Lecture/Presentation Contents

Cloud types

Clouds in shallow layers

Separation of convective and stratiform precipitation

Clouds in deep layers

Severe Storms

Orographic clouds and precipitation

Aerosol-cloud interactions