Cloud Physics

Fall 2018

Lecturer

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Lecture Contents

Cloud Microphysics

Cloud Dynamics

Rayleigh-Bénard Convection

Representation of Cloud Processes in Numerical Models

Recent Issues in Cloud Physics Research

References

1. Cloud Dynamics, 2nd edition, R. A. Houze, Jr., 2014, Academic Press, 432 pp.
2. An Introduction to Clouds, U. Lohmann, F. Luond, and F. Mahrt, 2016, Cambridge University Press, 391 pp.
3. Physics and Chemistry of Clouds, D. Lamb and J. Verlinde, 2011, Cambridge University Press, 584 pp.
4. A Short Course in Cloud Physics, 3rd edition, R. R. Rogers and M. K. Yau, 1989, Pergamon Press, 293 pp.
5. Microphysics of Clouds and Precipitation, H. R. Pruppacher and J. D. Klett, 1997, Kluwer Academic Publishers, 954 pp.
6. Atmospheric Convection, K. A. Emanuel, 1994, Oxford University Press, 580 pp.
7. Fluid Mechanics, 4th edition, P. K. Kundu and I. M. Cohen, 2008, Academic Press, 872 pp.
8. Bénard Cells and Taylor Vortices, E. L. Koschmieder, 1993, Cambridge University Press, 337 pp.
9. Atmospheric Chemistry and Physics, 2nd edition, J. H. Seinfeld and S. N. Pandis, 2006, Wiley-Interscience, 1203 pp.

Grading

mid-term exam: 25%

final exam: 25%

homework: 25%

presentation: 25%

* homework: solving problems, reading and summarizing articles

Problems and articles will be given in the class.

* presentation: reviewing a particular topic in cloud physics, 20-min presentation

You are supposed to choose a topic you are interested.