

Review for Mid-term Exam 2:

(see also review topics for mind-term exam 1)

1. Principles of remote sensing using emission in the IR and microwave regions.
Lecture 8, Eqs.[8.1]-[8.3], [8.7]-[8.13], [8.17], [8.19]. [8.20]-[8.22]
2. Measurements of path-integrated quantities: precipitable water vapor and cloud liquid water.
Lecture 8, Eqs.[8.23]-[8.25], Lab 6
3. Remote sensing of SST. Split-window technique. Microwave vs. IR retrievals of SST.
Lecture 9, Eqs.[9.1], [9.6]
4. Principles of sounding by emission. Concept of the weighting function. Principles of sounding of the temperature profile and trace gases.
Lectures 9, Eqs.[9.20], [9.21], [9.28], [9.29]-[9.31], [9.32], [9.37], Lab 7
5. Passive remote sensing of precipitation: IR and microwave techniques.
Lectures 10-11, Eqs.[10.3], [10.5]
6. Principles of retrievals of cloud properties from passive remote sensing.
Lecture 10-11, Lab 8
7. Principles of active remote sensing. Radar basics.
Lecture 12, Eqs.[12.1]-[12.8], [12.13], [12.14]-[12.23], [12.26]
8. Radar sensing of precipitation.
Lecture 12, Eqs.[12.31]-[12.38], Lab 9
9. Lidar basics. Lidar remote sensing of gases, aerosols, and clouds.
Lectures 13, Eqs.[13.1, 13.4, 13.9, 13.13, 13.14], Lab 10