## Lecture 29. EXAM 2

Review for Exam 2:

1. Scattering as a source of radiation. Multiple scattering. Single scattering approximation.
   ***Lecture 10, Eqs.[10.3]-[10.7]***

2. Principles of remote sensing of ozone in the UV region.
   ***Lecture 11***

3. Principles of remote sensing of ocean color.
   ***Lecture 13***

4. Principles of remote sensing using emission in the IR and microwave regions.
   ***Lecture 14, Eqs.[14.1]-[14.4], [14.7]-[14.8], [14.13]***

5. Measurements of path-integrated quantities: precipitable water vapor and cloud liquid water.
   ***Lecture 14, Eqs.[14.15]-[14.16]***

6. Remote sensing of SST. Split-window technique. Microwave vs. IR retrievals of SST.
   ***Lecture 15***

7. Passive remote sensing of precipitation: IR and microwave techniques
   ***Lecture 16***

8. Retrievals of cloud properties from passive remote sensing.
   ***Lecture* 17**

9. Principles of sounding by emission. Concept of the weighting function.
   ***Lecture 18, Eqs.[18.3]-[18.4], [18.12]***

10. Principles of sounding of the temperature profile and trace gases.
    ***Lecture 19***

11. Principles of active remote sensing. Radar basics. Backscattering.
    ***Lecture 20, Eq.[20.8], Lecture 21 ,Eqs.[21.1]-[21.5]***

12. Radar sensing of precipitation.
    ***Lecture 21, Eqs.[21.7]-[21.9]***

13. Basics of SAR and Doppler radars.
    ***Lectures 24 and 25***

14. Lidar basics. Lidar equation. Elastic backscattering and Raman lidars.
    ***Lectures 22-23, Eqs.[22.1], [23.1]***