Lecture 1

Outline:

1. What this course is about?
2. Assignments for Lecture 2.

1. What this course is about?

This graduate seminar course focuses on the current outstanding problems in clouds, aerosols and climate science. Selected discussion topics will cover some problems in understanding the complex nature of the interactions between various processes involving aerosols and clouds (including direct impacts and feedbacks), challenges in modeling these processes on a range of space and time scales, and limitations in existing observing systems.

Format: Reading and discussion of the literature. Some background materials on each discussed topic will be provided. All materials will be posted on the course website: http://irina.eas.gatech.edu/EAS_Spring2006.htm

The course evaluation will be based on:

1) Participation in discussion (each student will be responsible for leading at least one discussion topic)
2) Reports on course readings
3) Quizzes

2. Assignments for Lecture 2.

Lecture 2 discussion topics:

What are the main processes in the climate system involving aerosols and clouds? What are spatial and temporal scales of these processes? What are the most outstanding problems?

Assignment: *Name and be ready to discuss in class one or several important processes in which aerosols and/or clouds can affect the workings of the climate system. Identify the characteristic scales of these processes and the potential challenges in quantifying them. Prepare one-two pages for discussion in class. Email your pages to me (isokolik@eas.gatech.edu) by Jan.21th.*

Required reading: Climate Change 2001: The Scientific Basis, IPCC 2001. Chapter 1. The climate system an overview.
http://www.grida.no/climate/ipcc_tar/wg1/index.htm

Figures 1 and 2 below give the examples of schematic representation of the components, processes and their interactions in the climate system.

Figure 1. Schematic view of the components of the global climate system (bold), their processes and interactions (thin arrows) and some aspects that may change (bold arrows) (IPCC. 2001)

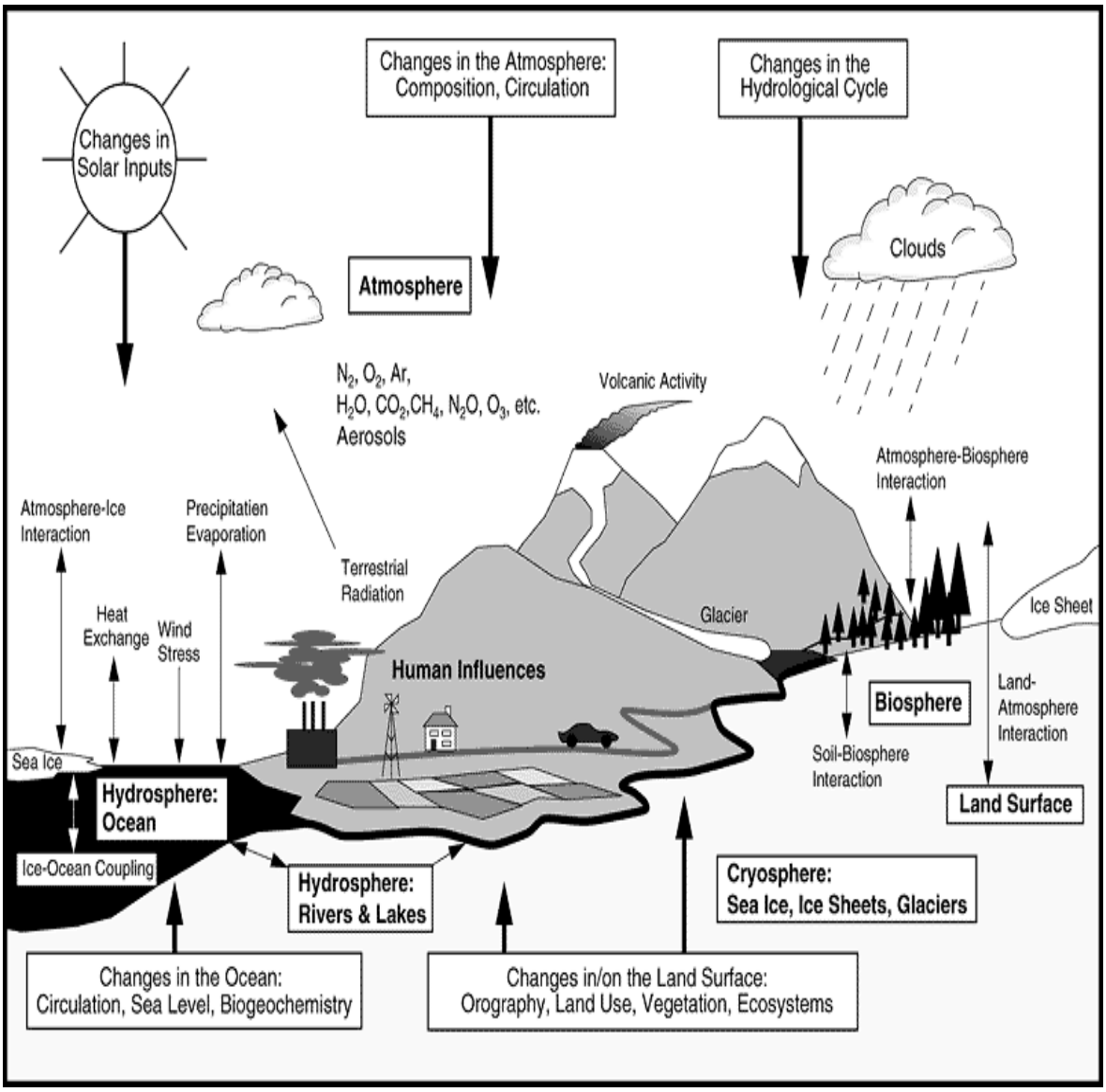

Figure 2. Schematic view of the processes of the climate system.