

**LECTURE INFORMATION SHEET**

<b>Module</b>	INTRODUCTION TO CLIMATOLOGY, HYDROMETEOROLOGY AND LARGE SCALE HYDROLOGY
<b>Lecture Title</b>	Large Scale Hydrology
<b>Lecturer</b>	Prof. Dr. Jorge A. Ramírez, <i>Colorado State University</i> , Fort Collins, USA
<b># of hours</b>	8 units (6 hours)
<b>Date(s)</b>	9-10 January 2002
<b>Venue</b>	ETH Zürich

**Objectives**

The lecture is expected to (1) present the land perspective on the surface-atmosphere interactions, (2) discuss the characteristics and use of large scale hydrological models, and (3) present hydrological issues in large scale coupling.

**Content**

<p>Outline</p> <ul style="list-style-type: none"> <li>- land perspective on surface-atmosphere connections and feedbacks: We will review fundamental aspects of continental scale water dynamics with special attention to its variability and to how this variability interacts with the nature of the land surface-atmosphere feedbacks</li> <li>- introduction to land surface hydrology parameterisations in modelling: We will introduce the most commonly used land surface hydrology parameterisations in the context of mesoscale and global scale coupled climate models</li> <li>- biosphere-atmosphere interactions: theory and modelling: We will present fundamental concepts of thermodynamic and hydrodynamic feedbacks between the land surface and the atmosphere.</li> <li>- statistical-dynamical models: We will review the basic concepts of statistical-dynamical approaches to the problem of incorporating sub-grid scale variability in physically-based land surface hydrology parameterisations and models.</li> </ul>
---

**Lecture Type**

<b>Classes</b>	(C) 8 units (2×45' + 6×45')
<b>Exercises (E)</b>	(E) examples presented in the lecture
<b>Practice(TP)</b>	(TP)
<b>Seminar (S)</b>	(S)
<b>Excursion (EX)</b>	(EX)

**Bibliography**

A list of journal and textbook references will be available at:

[http://www.engr.colostate.edu/~ramirez/ce\\_old/classes/NDK\\_7\\_11\\_1\\_2002/](http://www.engr.colostate.edu/~ramirez/ce_old/classes/NDK_7_11_1_2002/)

**Pre-requisites**

Pre-requisite (PR)	
Preparatory to (PT)	

**Examinations**

Report (TE)	
Seminar (S)	
Written exam (EE)	
Oral exam (EO)	