

MODULE: CLIMATOLOGY AND HYDROMETEOROLOGICAL MODELS

7-11 January 2002

ETH Zürich

Preliminary Schedule (4.10.2001)

ATMOSPHERIC DYNAMICS AND CLIMATE	PROF. HUW DAVIES
CONTENTS	Institute of Atmospheric and Climate Science ETH Zürich
<ul style="list-style-type: none">• Components of the climate system• Exchange processes between land-ocean surface and atmosphere• Mean climate patterns• Interannual and interdecadal variability, perturbations in the climate system• Greenhouse warming: what is it and why is it important?• Relation of climate dynamics to the water cycle at the global scale	
DATE: 7.1.2002 (10:45)	TIME: 3 HRS
	davies@atmos.umnw.ethz.ch
MEASUREMENT OF ATMOSPHERIC VARIABLES AND RAINFALL	DR. JÜRIG JOSS
CONTENTS	Osservatorio Ticinese Locarno-Monti MeteoSchweiz
<ul style="list-style-type: none">• Identifying atmospheric variables of interest, instrumentation, monitoring networks, data processing• Spatial and temporal variability, seasonality• Radar measurement of precipitation, ground-truthing and reliability	
DATE: 7.1.2002 (15:30)	TIME: 1.5 HRS
DATE: 8.1.2002 (9:00)	TIME: 1.5 HRS
	jjo@sma.ch
LARGE SCALE CIRCULATION MODELLING	DR. CHRISTOF APPENZELLER
CONTENTS	Klimatologie MeteoSchweiz
<ul style="list-style-type: none">• Structure, hierarchy, and goals of climate models• General circulation models• Uses and applications of the models: weather forecasting, seasonal forecasting, simulation of climate change• Introduction to the modelling of future climate scenarios (IPCC initiative)	
DATE: 8.1.2002 (10:45)	TIME: 3 HRS
	christof.appenzeller@meteoswiss.ch

<p>REGIONAL CLIMATOLOGY AND THE WATER CYCLE</p> <p>CONTENTS</p> <ul style="list-style-type: none"> • Introduction to the analysis of regional scale climatology (data-based) • Regional variability in space and time • Surface-atmosphere interactions and the water cycle • Support to regional climate modelling <p>DATE: 8.1.2002 (15:30) TIME: 1.5 HRS</p>	<p>DR. CHRISTOPH FREI</p> <p>Institute of Atmospheric and Climate Science ETH Zürich</p> <p>christoph.frei@geo.umnw.ethz.ch</p>
<p>REGIONAL CLIMATE MODELLING</p> <p>CONTENTS</p> <ul style="list-style-type: none"> • Numerical weather prediction, limited-area atmospheric modelling • Soil-atmosphere feedbacks and interactions • Modelling regional climatology (examples) • Forecasting and predictability • Modelling the effects of climate change on the water cycle <p>DATE: 9.1.2002 (9:00) TIME: 3 HRS</p>	<p>PROF. CHRISTOPH SCHÄR</p> <p>Institute of Atmospheric and Climate Science ETH Zürich</p> <p>schaer@geo.umnw.ethz.ch</p>
<p>MEASUREMENT OF HYDROLOGICAL VARIABLES AT THE LARGE SCALE</p> <p>CONTENTS</p> <ul style="list-style-type: none"> • Distributed hydrological parameters at the large scale, data organisation • Remote sensing: procedures, sensors, measurement of hydrological variables • Limitations of remote sensing: resolution, accuracy • Future developments <p>DATE: 9.1.2002 (13:45) TIME: 1.5 HRS</p>	<p>PROF. WOLFRAM MAUSER</p> <p>Institute of Geography Ludwigs-Maximilians-University München</p> <p>w.mauser@iggf.geo.uni-muenchen.de</p>
<p>LARGE SCALE HYDROLOGY</p> <p>CONTENTS</p> <ul style="list-style-type: none"> • The land perspective on surface-atmosphere connections and feedbacks • Introduction to land surface hydrology parametrisations in modelling • Hydrological issues in mesoscale coupling • Biosphere-atmosphere interactions: theory and modelling • Statistical-dynamical models <p>DATE: 9.1.2002 TIME: 1.5 HRS DATE: 10.1.2002 TIME: 4.5 HRS</p>	<p>PROF. JORGE RAMÍREZ</p> <p>Department of Civil Engineering Colorado State University</p> <p>ramirez@engr.colostate.edu</p>
<p>DOWNSCALING TO CATCHMENT SCALE</p> <p>CONTENTS</p> <ul style="list-style-type: none"> • Principles and motivations for downscaling • Downscaling techniques (statistical, dynamical) • Modelling examples <p>DATE: 10.1.2002 TIME: 1.5 HRS</p>	<p>PROF. PAOLO BURLANDO</p> <p>Institute of Hydromechanics and Water Resources Management ETH Zürich</p> <p>paolo.burlando@ethz.ch</p>