



ICTP DIPLOMA PROGRAMME IN EARTH SYSTEM PHYSICS 2015-16 SYLLABUS

Earth Systems Thermodynamics

24 hours. Lecturers: A. Tompkins, E. Coppola, R. Farneti, F. Kucharski, F. Solmon, G. Tumolo, G. Giuliani

Syllabus:

Lecture 1 Overview of the different components of an Earth System Model and their coupling. (Giuliani)

Lectures 2 Overview of discretization techniques of the dynamical governing equations on global and regional domains. (Tumolo)

Lecture 3, 4 Parameterization of subgrid processes; turbulence; cloud convection; radiation (Tompkins)

Lecture 5, 6 Land-surface modeling (Coppola)

Lecture 7, 8 Hydrological modeling (Coppola)

Lecture 9, 10 Ocean and Sea-ice modeling; horizontal and vertical discretization; regional and global examples; parameterization of subgrid processes (Farneti)

Lecture 11, 12 Atmospheric chemistry modelling (Solmon)

