

Course Objectives: To explore the interactions between circulation and climate through through the perspective of selected and long-standing biases in Earth System Models.

Expectations and Grading: Students are expected to follow the lecture and work through any exercises. The course will be graded based on an exam given at the end of the semester.

Instructor: Prof. Dr Bjorn Stevens (Max Planck Institute for Meteorology, BU53 Room 414) and Dr Hauke Schmidt (Max Planck Institute for Meteorology, BU53 Room 416) Appointments available upon request. The course webpage is <http://www.mpimet.mpg.de/en/mitarbeiter/bjoern-stevens/teaching/gcc.html>

Coordinates: Tuesdays from 12:30 -14:00 in H3 of the Geomatikum.

Prerequisites: Basic math and physics, including multivariable calculus, partial and ordinary differential equations. Atmospheric thermodynamics, cloud physics and introductory geophysical fluid dynamics.

Reference Material: There is currently no script for the class. A short reading list (2-3 papers) will be provided for each topic before the first lecture on that topic.

Topics and Timeline:

Date	Subject	Lecturer
15.10.2019	Aims, Expectations and Overview	HS & BS
22.10.2019	Marine Stratocumulus I	BS
29.10.2019	Marine Stratocumulus II	BS
05.11.2019	Upper Tropospheric Temperature I	HS
12.11.2019	Upper Tropospheric Temperature II	HS
19.11.2019	Tropical SSTs and precipitation I	BS
26.12.2019	Tropical SSTs and precipitation II	BS
12.12.2019	Meridional Overturning Circulation I	BS
17.12.2019	Meridional Overturning Circulation II	BS
07.01.2020	High latitude lower stratosphere I	HS
14.01.2020	High latitude lower stratosphere II	HS
21.01.2020	Mid-latitude jet-streams I	HS
28.01.2020	Mid-latitude jet-streams II	HS