

KARTHAUS-2022 / GLACIERS AND ICE SHEETS IN THE CLIMATE SYSTEM

Programme

Exercises, computer projects

The 36 participants are divided into 12 teams. In the first part of the afternoon, 6 teams do exercises, supervised by the teacher indicated in the programme. Meanwhile, the other 6 teams work on computer projects. In the second half of the afternoon the teams switch. A particular team of 3 students works on the same project during the entire course, guided by a teacher. At the end of the course there will be 15-minute presentations on the outcome of the projects.

Tuesday 24 May

Afternoon	Arrival / check-in
19:30	DINNER

Wednesday 25 May

08:30 - 08:50	Welcome / practical announcements (<i>Karlsson</i>)
08:50 - 09:30	Continuum mechanics-I (<i>Hewitt</i>)
09:40 - 10:30	Continuum mechanics-II (<i>Hewitt</i>)
10:30 - 10:50	coffee break
10:50 - 11:40	Rheology of ice (<i>Karlsson</i>)
11:50 - 12:40	Thermodynamics of ice (<i>Karlsson</i>)
13:00	LUNCH
14:00 - 15:30	4-min presentations by students
16:00 - 16:30	coffee break
16:30 - 18:00	4-min presentations by students
19:30	DINNER

Thursday 26 May (Ascension day)

08:30 - 09:20	Commonly used approximations in ice flow modelling (<i>Pattyn</i>)
09:30 - 10:20	Analytical models of ice sheets (<i>Oerlemans</i>)
10:20 - 10:40	coffee break
10:40 - 11:30	Climates of ice sheets and glaciers (<i>Reijmer</i>)
11:40 - 12:30	Modelling glacier surface and near-surface processes I (<i>Reijmer</i>)
12:45	LUNCH
14:00 - 15:30	Group I: exercises (<i>Hewitt</i>) / Group II: computer projects
15:30 - 16:00	coffee break
16:00 - 17:30	Group II: exercises (<i>Hewitt</i>) / Group I: computer projects
19:30	DINNER

Friday 27 May

08:30 - 09:20	Numerical modeling of ice sheets and ice shelves I (<i>Pattyn</i>)
09:30 - 10:20	Numerical modeling of ice sheets and ice shelves II (<i>Pattyn</i>)
10:20 - 10:40	coffee break
10:40 - 11:30	Sliding (<i>Hewitt</i>)
11:40 - 12:30	Glacier hydrology (<i>Hewitt</i>)
12:45	LUNCH
	FREE TIME
19:30	DINNER

Saturday 28 May

08:30 - 09:20	Ice cores I (<i>Blunier</i>)
09:30 - 10:20	Ice cores II (<i>Blunier</i>)
10:20 - 10:40	coffee break
10:40 - 11:30	Numerical modeling of ice sheets and ice shelves III (<i>Pattyn</i>)
11:40 - 12:30	Minimal glacier models (<i>Oerlemans</i>)
12:45	LUNCH
14:00 - 15:30	Group II: exercises (<i>Pattyn</i>) / Group I: computer projects

15:30 - 16:00 coffee break
16:00 - 17:30 Group I: exercises (*Pattyn*) / Group II: computer projects
19:30 DINNER

Sunday 29 May

19:30

Excursion / FREE TIME

Activity options are listed below

DINNER

Monday 30 May

08:30 - 09:20 Ice cores III (*Blunier*)
09:30 - 10:20 Ground-penetrating radar (GPR) methods in glaciology (*Navarro*)
10:20 - 10:40 coffee break
10:40 - 11:30 Internal structure and physical properties of glaciers from GPR (*Navarro*)
11:40 - 12:30 Ice on Mars (*Karlsson*)
12:45 LUNCH
14:00 - 15:30 Group I: exercises (*Oerlemans*) / Group II: computer projects
15:30 - 16:00 coffee break
16:00 - 17:30 Group II: exercises (*Oerlemans*) / Group I: computer projects
19:30 DINNER

Tuesday 31 May

08:30 - 09:20 The mass budget of the Greenland and Antarctic ice sheets (*Reijmer*)
09:30 - 10:20 Basal processes and geomorphology (*Hewitt*)
10:20 - 10:40 coffee break
10:40 - 11:30 Calving glaciers (*Oerlemans*)
11:40 - 12:30 The response of glaciers to climate change (*Oerlemans*)
12:45 LUNCH
14:00 - 15:30 Group I & II: Computer projects
15:30 - 16:00 coffee break
16:00 - 17:30 Group I & II: Computer projects
19:30 DINNER

Wednesday 1 June

08:30 - 09:20 Ice sheet - ocean interaction - basics (*Reese*)
09:30 - 10:20 Ice sheet - ocean interaction - modelling I (*Reese*)
10:20 - 10:40 coffee break
10:40 - 11:30 Introduction to glacial geomorphology (*Bentley*)
11:40 - 12:30 Geomorphology and mapping of paleo-ice sheets (*Bentley*)
12:45 LUNCH
14:00 - 15:30 Group I: exercises (*Blunier*) / Group II: computer projects
15:30 - 16:00 coffee break
16:00 - 17:30 Group II: exercises (*Blunier*) / Group I: computer projects
19:30 DINNER

Thursday 2 June

08:30 - 09:20 Applied glaciology: possible solutions for problems with water availability and permafrost (*Oerlemans*)
09:30 - 10:20 Ice sheet - ocean interaction - modelling II (*Reese*)
10:20 - 10:40 coffee break
10:40 - 11:30 Ice sheet - ocean interaction - modelling III (*Reese*)
11:40 - 12:30 The Ice Sheet Model Intercomparison Project (*Patyn*)
12:45 LUNCH
14:00 - 15:30 Group I & II: computer projects
15:30 - 16:00 coffee break
16:00 - 17:30 Group I & II: computer projects
19:30 DINNER

Friday 3 June

08:30 - 09:20	The history of the Antarctic ice sheet (<i>Bentley</i>)
09:30 - 10:20	<i>working on project presentations</i>
10:40 - 11:00	coffee break
11:00 – 12:30	Presentation of computer projects (6x)
12:45	LUNCH
14:00 - 15:30	Presentation of computer projects (6x)
	Final words
15:30 - 16:00	coffee break
19:30	DINNER

Saturday 4 June

Departure