

KARTHAUS-2023

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 23 May

Afternoon	Arrival / check-in
19:30	DINNER

Wednesday 24 May

08:30 - 08:50	Welcome / practical announcements (<i>Reijmer</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 25 May

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>Van de Berg</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 26 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	Modelling glacier surface and near-surface processes II (<i>Reijmer</i>)
11:40 - 12:30	Sliding (<i>Hewitt</i>)
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

Saturday 27 May

08:30 - 09:20	Ice sheet - ocean interaction I (<i>Winkelmann</i>)
09:30 - 10:20	Ice sheet - ocean interaction II (<i>Winkelmann</i>)
10:20 - 10:40	coffee break
10:40 - 11:30	Glacier hydrology (<i>Hewitt</i>)
11:40 - 12:30	Geophysical and Remote sensing methods in glaciology I (<i>Eisen</i>)
12:45	LUNCH
	FREE TIME

19:30	DINNER
Sunday 28 May	
08:30 - 09:20	Geophysical and Remote-sensing methods in glaciology II (<i>Eisen</i>)
09:30 - 10:20	Geophysical and Remote sensing methods in glaciology III (<i>Eisen</i>)
10:20 - 10:40	coffee break
10:40 - 11:30	Ice sheet - ocean interaction III (<i>Winkelmann</i>)
11:40 - 12:30	Introduction to glacial geomorphology (<i>Bentley</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 (<i>Pattyn</i>) / Group II: computer projects
19:30	DINNER
Monday 29 May	
08:30 - 09:20	Tipping points in the climate systems (<i>Winkelmann</i>)
09:30 - 10:20	Basal processes and geomorphology (<i>Hewitt</i>)
10:20 - 10:40	coffee break
10:40 - 11:30	Geomorphology and mapping of paleo-ice sheets (<i>Bentley</i>)
11:40 - 12:30	Minimal glacier models (<i>Oerlemans</i>)
12:45	LUNCH
14:00 - 15:30	Group I: workshop diversity (<i>Keisling</i>) / Group II: computer projects
15:30 - 16:00	coffee break
16:00 - 17:30	Group II: workshop diversity (<i>Keisling</i>) / Group I: computer projects
19:30	DINNER
Tuesday 30 May	
9:00 -	Excursion to the Lazaun rock glacier (excursion to Hochjoch glacier only if weather and trail conditions permit)
19:30	DINNER
Wednesday 31 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	The response of glaciers to climate change (<i>Oerlemans</i>)
11:40 - 12:30	The mass budget of the Greenland and Antarctic ice sheets (<i>Van de Berg</i>)
12:45	LUNCH
14:00 - 15:30	Group II: exercises (<i>Blunier</i>) / Group I: computer projects
15:30 - 16:00	coffee break
16:00 - 17:30	Group I: exercises (<i>Blunier</i>) / Group II: computer projects
19:00	DINNER
21:00	Concert (<i>Keller & Oerlemans</i>)
Thursday 1 June	
08:30 - 09:20	Ice cores III (<i>Blunier</i>)
09:30 - 10:20	Applied glaciology (<i>Keller</i>)
10:20 - 10:40	coffee break
10:40 - 11:30	Geodynamics, glacial isostasy and sea level (<i>Keisling</i>)
11:40 - 12:30	Ice sheet modelling through the Cenozoic (<i>Keisling</i>)
12:45	LUNCH
14:00 - 15:30	Group I: exercises (<i>Winkelmann</i>) / Group II: computer projects
15:30 - 16:00	coffee break
16:00 - 17:30	Group II: exercises (<i>Winkelmann</i>) / Group I: computer projects
19:30	DINNER
Friday 2 June	
08:30 - 09:20	The history of the Antarctic ice sheet (<i>Bentley</i>)
09:30 - 10:20	Ice on Mars (<i>Karlsson</i>)
10:20 - 10:40	coffee break

10:40 - 11:30	<i>working on project presentations</i>
11:30 - 12:30	<i>working on project presentations</i>
12:45	LUNCH
14:00 - 15:30	Presentation of computer projects (6x)
15:30 - 16:00	coffee break
16:00 - 17:30	Presentation of computer projects (6x)
17:30 - 18:00	Discussion
19:30	DINNER

Saturday 3 June **Departure**