KARTHAUS-2025 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.

Monday 19 May

Afternoon	Arrival / check-in	
19:30	DINNER	

Tuesday 20 May

08:30 - 08:35	Welcome / practical announcements (Reijmer)
08:35 - 09:25	Introduction to Ice Sheets and Glaciers in the Climate System (Oerlemans)
09:35 - 10:25	Rheology of ice <i>(Karlsson)</i>
10:25 - 10:40	Coffee break
10:40 - 11:30	Continuum mechanics-I <i>(Hewitt)</i>
11:40 - 12:30	Continuum mechanics-II (<i>Hewitt</i>)
12:45	LUNCH
14:00 - 15:30	3-min presentations by students and teachers
15:30 - 16:00	Coffee break
16:00 - 17:30	3-min presentations by students and teachers
19:30	DINNER

Wednesday 21 May

08:30 - 09:20	Thermodynamics of ice (Karlsson)
09:30 - 10:20	Commonly used approximations in ice flow modelling (Henry)
10:20 - 10:40	Coffee break
10:40 - 11:30	Analytical models of ice sheets (Oerlemans)
11:40 - 12:30	Climates of ice sheets and glaciers (Van de Berg)
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 (Hewitt) / Group I: computer projects
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19:30	DINNER

Thursday 22 May

08:30 - 09:20	Numerical modeling of ice sheets and ice shelves I (Henry)
09:30 - 10:20	Numerical modeling of ice sheets and ice shelves II (Henry)
10:20 - 10:40	Coffee break
10:40 - 11:30	Modelling surface and near-surface processes: Surface energy balance <i>(Reijmer)</i>
11:40 - 12:30	Modelling surface and near-surface processes: Firn processes (Reijmer)
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 23 May

08:30 - 09:20	Ice sheet - ocean interaction I (Reese)
09:30 - 10:20	Ice sheet - ocean interaction II (Reese)
10:20 - 10:40	Coffee break

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10:40 - 11:30	Geophysical and Remote sensing methods in glaciology I (Eisen)
11:40 - 12:30	Geophysical and Remote-sensing methods in glaciology II (Eisen)
12:45	LUNCH
	FREE TIME
19:30	DINNER

Saturday 24 May

08:30 - 09:20	Sliding (Hewitt)
09:30 - 10:20	Glacier hydrology (Hewitt)
10:20 - 10:40	Coffee break
10:40 - 11:30	Introduction to glacial geomorphology and mapping of paleo-ice sheets (<i>Pedersen</i>)
11:40 - 12:30	Basal processes and large-scale geomorphology (Pedersen)
12:45	LUNCH
14:00 - 15:30	Group I: exercises (Henry) / Group II: computer projects
15:30 - 16:00	Coffee break
16:00 - 17:30	Group II: exercises (Henry) / Group I: computer projects
19:30	DINNER

Sunday 25 May

08:30 - 09:20	Tidewater glaciers (Reese)
09:30 - 10:20	Tipping points in the climate systems (Reese)
10:20 - 10:40	Coffee break
10:40 - 11:30	Minimal glacier models (Oerlemans)
11:40 - 12:30	Geophysical and Remote-sensing methods in glaciology III (Eisen)
12:45	LUNCH
14:00 - 15:30	Group I: Workshop DEI (Keisling) / Group II: computer projects
15:30 - 16:00	Coffee break
16:00 - 17:30	Group II: Workshop DEI (Keisling) / Group I: computer projects
19:30	DINNER

Monday 26 May 9:00 -

9:00 -19:30

Excursion to the Lazaun rock glacier DINNER

Tuesday 27 May

08:30 - 09:20	Ice cores I (Blunier)
09:30 - 10:20	Ice cores II (Blunier)
10:20 - 10:40	Coffee break
10:40 - 11:30	Glacial isostastic adjustment (GIA) and sea level I (Pedersen)
11:40 - 12:30	Glacial isostastic adjustment (GIA) and sea level I (Pedersen)
12:45	LUNCH
14:00 - 15:30	Group II: exercises (<i>Reese</i>) / Group I: computer projects
15:30 - 16:00	Coffee break
16:00 - 17:30	Group I: exercises (<i>Reese)</i> / Group II: computer projects
19:30	DINNER
	Concert by Felix and Hans (and opportunity for students to perform)

Wednesday 28 May

08:30 - 09:20	The response of glaciers to climate change (Oerlemans)
09:30 - 10:20	Applied glaciology <i>(Keller)</i>
10:20 - 10:40	Coffee break
10:40 - 11:30	Paleo ice-sheet and climate modelling I (Keisling)
11:40 - 12:30	Paleo ice-sheet and climate modelling II (Keisling)
12:45	LUNCH
14:00 - 15:30	Group I: exercises (<i>Pedersen</i>) / Group II: computer projects
15:30 - 16:00	Coffee break
16:00 - 17:30	Group II: exercises (<i>Pedersen</i>) / Group I: computer projects

19:30 DINNER

Thursday 29 May

08:30 - 09:20	The mass budget of the Greenland and Antarctic ice sheets (Van de Berg)
09:30 - 10:20	The history of the Antarctic ice sheet (Keisling)
10:20 - 10:40	Coffee break
10:40 - 11:30	Ice on Mars <i>(Karlsson)</i>
11:30 - 12:30	working on project presentations
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

Friday 30 May

Departure