KARTHAUS-2024
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 21 May

Afternoon	**Arrival / check-in**
19:30	DINNER

Wednesday 22 May

08:30 - 08:50	Welcome / practical announcements *(Reijmer)*
08:50 - 09:30	Continuum mechanics-I *(Buzzard)*
09:40 - 10:30	Continuum mechanics-II *(Buzzard)*
10:30 - 10:50	coffee break
10:50 - 11:40	Rheology of ice *(Pettit)*
11:50 - 12:40	Thermodynamics of ice *(Karlsson)*
13:00	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

Thursday 23 May

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

Friday 24 May

08:30 - 09:20	Numerical modeling of ice sheets and ice shelves I *(Pattyn)*
09:30 - 10:20	Numerical modeling of ice sheets and ice shelves II *(Pattyn)*
10:20 - 10:40	coffee break
10:40 - 11:30	Modelling glacier surface and near-surface processes II (firn processes) *(Buzzard)*
11:40 - 12:30	Geophysical methods in glaciology *(Karlsson)*
12:45	LUNCH
14:00 - 15:30	Group II: exercises *(Pattyn)* / 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

Saturday 25 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
10:40 - 11:30	Glacier hydrology *(Hewitt)*
11:40 - 12:30	Sliding *(Hewitt)*

12:45	LUNCH
14:00 - 15:30	Group II: exercises *(Oerlemans)* / Group I: computer projects
15:30 - 16:00	coffee break
16:00 - 17:30	Group I: exercises *(Oerlemans)* / Group II: computer projects
19:30	DINNER

Sunday 26 May

08:30 - 09:20	Remote sensing methods in glaciology I *(Sørensen)*
09:30 - 10:20	Remote sensing methods in glaciology II *(Sørensen)*
10:20 - 10:40	coffee break
10:40 - 11:30	Introduction to glacial geomorphology *(Bentley)*
11:40 - 12:30	Basal processes and geomorphology *(Hewitt)*
12:45	LUNCH
	FREE TIME
19:30	DINNER

Monday 27 May

08:30 - 09:20	Minimal glacier models *(Oerlemans)*
09:30 - 10:20	The response of glaciers to climate change *(Oerlemans)*
10:20 - 10:40	coffee break
10:40 - 11:30	Geomorphology and mapping of paleo-ice sheets *(Bentley)*
11:40 - 12:30	The mass budget of the Greenland and Antarctic ice sheets *(Sørensen)*
12:45	LUNCH
14:00 - 15:30	Group I: workshop diversity *(Keisling)* / Group II: computer projects
15:30 - 16:00	coffee break
16:00 - 17:30	Group II: workshop diversity *(Keisling)* / Group I: computer projects
19:30	DINNER

Tuesday 28 May

08:30 – 09:20	Ice cores I *(Pettit)*
09:30 – 10:20	Ice cores II *(Pettit)*
10:20 – 10:40	coffee break
10:40 – 11:30	Geodynamics: intro to isostasy, Earth rheology and sea level *(Gomez)*
11:40 – 12:30	Ice sheet - ocean interaction III (calving glaciers) *(Reese)*
12:45	LUNCH
14:00 - 15:30	Group II: exercises *(Pettit)* / Group I: computer projects
15:30 - 16:00	coffee break
16:00 - 17:30	Group I: exercises *(Pettit)* / Group II: computer projects
19:30	DINNER

Wednesday 29 May

9:00 -	**Excursion to the Lazaun rock glacier**
19:30	DINNER

Thursday 30 May

08:30 - 09:20	Modern and future sea level changes (observations and modeling) *(Gomez)*
09:30 - 10:20	Paleo ice-sheet and climate modelling I *(Keisling)*
10:20 - 10:40	coffee break
10:40 - 11:30	Paleo ice-sheet and climate modelling II *(Keisling)*
11:40 - 12:30	Paleo sea level and glacial isostastic adjustment (GIA). *(Gomez)*
12:45	LUNCH
14:00 - 15:30	Group I: exercises *(Gomez)* / Group II: computer projects
15:30 - 16:00	coffee break
16:00 - 17:30	Group II: exercises *(Gomez)* / Group I: computer projects
19:30	DINNER

Friday 31 May

08:30 - 09:20	The History of the Antarctic ice sheet *(Bentley)*
09:30 - 10:20	Ice on Mars *(Karlsson)*
10:20 - 10:40	coffee break

10:40 - 11:30	*working on project presentations*
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

Saturday 1 June **Departure**