

# KARTHAUS-2026

## 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 18 May

Afternoon  
19:30

Arrival / check-in  
DINNER

#### Tuesday 19 May

08:30 - 08:35	Welcome / practical announcements ( <i>Reijmer</i> )
08:35 - 09:25	Introduction to Ice Sheets and Glaciers in the Climate System ( <i>Reijmer</i> )
09:35 - 10:25	Rheology of ice ( <i>Pettit</i> )
10:25 - 10:40	Coffee break
10:40 - 11:30	Continuum mechanics-I ( <i>Buzzard</i> )
11:40 - 12:30	Continuum mechanics-II ( <i>Buzzard</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 20 May

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

#### Thursday 21 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 surface and near-surface processes: Surface energy balance ( <i>Reijmer</i> )
11:40 - 12:30	Modelling surface and near-surface processes: Firn processes ( <i>Buzzard</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

#### Friday 22 May

08:30 - 09:20	Ice sheet - ocean interaction I ( <i>Reese</i> )
09:30 - 10:20	Ice sheet - ocean interaction II ( <i>Reese</i> )
10:20 - 10:40	<b>Coffee break</b>

10:40 - 11:30	Geophysical methods in glaciology I ( <i>Karlsson</i> )
11:40 - 12:30	Ice on mars ( <i>Karlsson</i> )
12:45	LUNCH
	<b>FREE TIME</b>
19:30	DINNER

**Saturday 23 May**

08:30 - 09:20	Sliding ( <i>Hewitt</i> )
09:30 - 10:20	Glacier hydrology ( <i>Hewitt</i> )
10:20 - 10:40	Coffee break
10:40 - 11:30	Introduction to glacial geomorphology ( <i>Bentley</i> )
11:40 - 12:30	Geomorphology and mapping of paleo-ice sheets ( <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

**Sunday 24 May**

08:30 - 09:20	Remote sensing methods in glaciology I ( <i>Sørensen</i> )
09:30 - 10:20	Remote sensing methods in glaciology II ( <i>Sørensen</i> )
10:20 - 10:40	Coffee break
10:40 - 11:30	Ice cores I ( <i>Pettit</i> )
11:40 - 12:30	Ice cores II ( <i>Pettit</i> )
12:45	LUNCH
14:00 - 15:30	Group I: exercises ( <i>Reese</i> ) / Group II: computer projects
15:30 - 16:00	Coffee break
16:00 - 17:30	Group II: exercises ( <i>Reese</i> ) / Group I: computer projects
19:30	DINNER

**Monday 25 May**

9:00 -	<b>Excursion to the Lazaun rock glacier</b>
19:30	DINNER

**Tuesday 26 May**

08:30 - 09:20	Minimal glacier models ( <i>Oerlemans</i> )
09:30 - 10:20	The response of glaciers to climate change ( <i>Oerlemans</i> )
10:20 - 10:40	Coffee break
10:40 - 11:30	Geodynamics, glacier isostasy and sea level ( <i>Keisling</i> )
11:40 - 12:30	Modern-day observations of GIA ( <i>Sørensen</i> )
12:45	LUNCH
14:00 - 15:30	Group II: Workshop DEI ( <i>Keisling</i> ) / Group I: computer projects
15:30 - 16:00	Coffee break
16:00 - 17:30	Group I: Workshop DEI ( <i>Keisling</i> ) / Group II: computer projects
19:30	DINNER

**Wednesday 27 May**

08:30 - 09:20	Ice sheet - ocean interaction III: Tidewater glaciers ( <i>Reese</i> )
09:30 - 10:20	Tipping points in the climate systems ( <i>Reese</i> )
10:20 - 10:40	Coffee break
10:40 - 11:30	Paleo ice-sheet and climate modelling I ( <i>Keisling</i> )
11:40 - 12:30	Paleo ice-sheet and climate modelling II ( <i>Keisling</i> )
12:45	LUNCH
14:00 - 15:30	Group I: exercises ( <i>Oerlemans</i> ) / Group II: computer projects
15:30 - 16:00	Coffee break
16:00 - 17:30	Group II: exercises ( <i>Oerlemans</i> ) / Group I: computer projects
19:30	DINNER

**Thursday 28 May**

08:30 - 09:20	The mass budget of the Greenland and Antarctic ice sheets ( <i>Sørensen</i> )
09:30 - 10:20	The history of the Antarctic ice sheet ( <i>Bentley</i> )
10:20 - 10:40	Coffee break
10:40 - 11:30	Challenges in measuring on glaciers ( <i>Portanger</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

**Friday 29 May**

**Departure**