

DK CIM at the Universität Innsbruck



Doctoral Programme Computational Interdisciplinary Modelling  
DK CIM

In 2010 the DK CIM was initiated at the Universität Innsbruck within the framework of the Research Area Scientific Computing. The program provides substantiated research-guided and well-structured training for excellent Ph.D. students in the interdisciplinary field of computational modelling utilizing high performance computing, within the fields of atmospheric science, chemistry, computer science, material science, engineering science, mathematics and physics.

[uibk.ac.at/dk-cim](http://uibk.ac.at/dk-cim)

## Contact

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## Programme

of the

Summer school 2024:

### **OpenMP course and future development of the DK**

Innsbruck Doctoral College

Computational Interdisciplinary Modelling

**Monday, September 16<sup>th</sup> to Thursday, September 19<sup>th</sup> 2024**

UZE Obergurgl & Universität Innsbruck

Tyrol, Austria

## Programme

### Monday, September 16th 2023: Universität Innsbruck – Transfer to Obergurgl

- 11:30 – 12:15** Check in and Welcome Lukas Einkemmer and Philipp Gschwandtner
- 12:30 – 14:00 Lunch*
- 14:00 – 15:35** Introduction to modern hardware (talk)  
An overview of OpenMP (talk)
- 15:35 – 16:00 Coffee*
- 16:00 – 17:40** OpenMP programming and execution model (talk+practical)
- 18:30 – 19:30 Dinner*
- 20:00 – 21:00 Get Together – Social Event**

### Tuesday, September 17th 2023: UZE Obergurgl

- 08:00 – 09:00 Breakfast*
- 09:00 – 10:30** OpenMP worksharing directives (talk+practical)
- 10:30 – 11:00 Coffee*
- 11:00 – 12:15** More Open MP (talk+practical)  
Summary (talk) + Q & A
- 12:30 – 14:00 Lunch*
- 14:00 – 15:30** How to write correct OpenMP programs (talk)  
How to write efficient OpenMP programs (talk)  
Heat equation (talk+practical)
- 15:30 – 16:00 Coffee*
- 16:00 – 17:45** Head equation (practical – continued)  
Vectorization with OpenMP (talk)
- 18:30 – 19:30 Dinner*

### Wednesday, September 18th 2023: UZE Obergurgl

- 08:00 – 09:00 Breakfast*
- 09:00 – 10:30** Intel Inspector XE (demo+practical)  
Thread affinity in OpenMP (talk)
- 10:30 – 11:00 Coffee*
- 11:00 – 12:15** The taskloop directive (talk+practical)
- 12:30 – 14:00 Lunch*
- 14:00 – 15:30** Workshop conclusion and preparation of output
- 15:30 – 16:30 Coffee*
- 16:30 – 17:30 Students meeting – future of the DK, Ideas for further development, to be presented to the faculty next day**
- 17:30 – 18:15 Discussion time**
- 18:30 – 19:30 Dinner*

### Thursday, September 19th 2023: UZE Obergurgl

- 08:00 – 09:00 Breakfast*
- 09:00 – 14:00** Outdoor activities, hike to Schönwieshütte or other destinations with lunch
- 14:00 – 15:30** Discussion of thesis progress (progress)  
**(7 min. presentation + 3 min. discussion, 6 Students)**  
Introductory talk of new Student **(15.min + 5 min.)**
- 15:30 – 16:30 Coffee*
- 16:30 – 17:30 Presentation of the WS outcome and student meeting results to the faculty members**

END