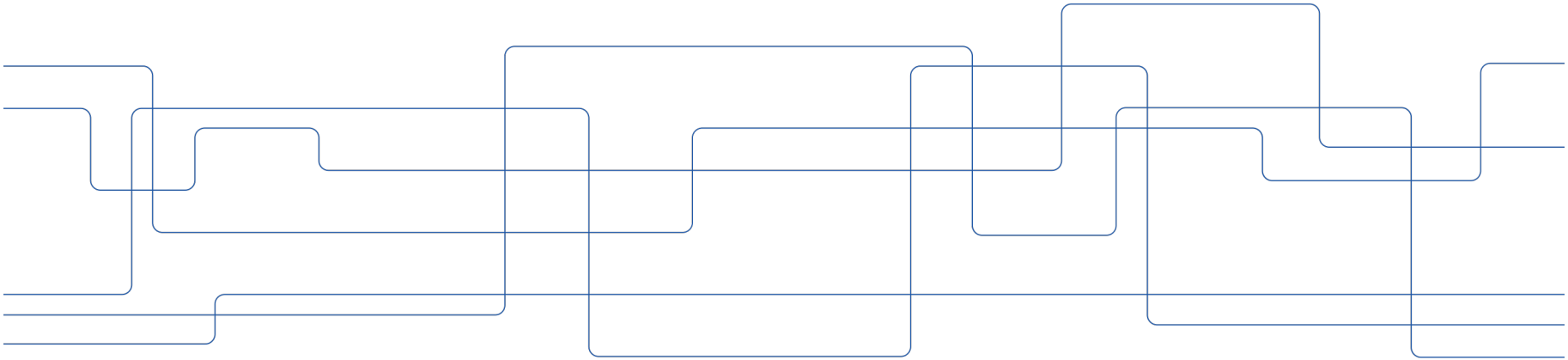
KTH ROYAL INSTITUTE OF TECHNOLOGY

Welcome to the PDC Summer School

Stefano Markidis
Associate Professor of High-Performance Computing
Co-Chair of the PDC Summer School
KTH Royal Institute of Technology



PDC Summer School – Organizers & TAs

Alessandra Villa
Lead Organizer

Micaela Barth
Organizer

Genet Edmondson
Organizer / WEB

Gert Svensson
PDC Deputy Director

Luca Manzari
Dardel Tour

Patrick Norman
PDC Director
Co-Chair PDC
Summer School

Daniel Henningson
SeRC Director

Henric Zazzi
+ PDC Support
Team

Stefano Markidis
PDC Summer
School Co-Chair

Martin Karp
Lead TA

Jennifer Faj
TA

Måns Andersson
TA

Jacob Wahlgren
TA

Daniel Araújo
de Medeiros
TA

Yiifei He
TA

International Lecturers

Ana Lucia Varbanescu
University of Amsterdam
University of Twente

Sunita Chandrasekaran
University of Delaware
Brookhaven National Laboratory

Ivy Peng
KTH Scalalab
Director of OpenCUBE

Radovan Bast
University of Tromsø (UiT)

Erwin Laure
Max Planck Computing and Data Facility
Technical University of Munich

Jean-Baptiste Besnard
ParaTools

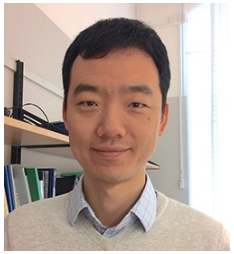
Jean Favre
Swiss National Supercomputing Centre

Speakers – Enlightening Talks

Pekka Manninen
CSC, the Finnish IT Center for Science
Director of Science & Technology

Rossen Apostolov
KTH Royal Institute of Technology
Director of Bioexcel CoE

Niclas Jansson
KTH Royal Institute of Technology
Director of CEEC CoE
Neko Chief Architect



Xin Li
KTH Royal Institute of Technology
Veloxchem Core Developer

Szilárd Páll
KTH Royal Institute of Technology
GROMACS Core Developer

Berk Hess
KTH Royal Institute of Technology
GROMACS Core Developer

Goal of the School

- Introduce you to high-performance computing
- Give you practical knowledge to apply to your own work
- Discuss practical applications and look into the future

What is expected of you?

- Attend and Participate in the classes
  - Lectures mixed with Hands-on
  - Interact with lecturers and TAs
    - > In class questions: introduce yourself (name) and ask your question
    - > Slack
- Read the hands-out and course material on PDC Summer School Website / Slack / GitHub Repository
- Complete two quizzes on course material – at end of each week
- Complete one final programming assignment
- Complete an online feedback on last day of the course

PDC Summer School – Code: FDD3260 - 5 ETCS

- Third-Cycle (Ph.D. level) course with **KTH code: FDD3260**
- 5 ETCS
- Two weeks of lectures + two quizzes
- Ten days for the final programming assignment
- Grade: Pass/Fail
- Submit by email to: markidis@kth.se and makarp@kth.se

- **KTH Ph.D. Students:** your registration and grades will be registered in Ladok after you pass the quizzes, and final programming assignment
- **If you are not a KTH Ph.D. student**, you will receive a **5.0 Credit Certificate (≠ Attendance Certificate)** to submit to your University Teaching administration.

Quizzes and Final Programming Assignment

- Quiz I will be published on August 18 – till August 25 to complete - Individual
- Quiz II will be published on August 25 – till September 1 to complete – Individual
- Final programming assignment, due September 6 – Groups 1-3
  - Two parts
  - Code posted on GitHub – OpenMP, CUDA/HIP, MPI porting of a C serial code + performance analysis
  - Short report, maximum five pages, with a GitHub link summarizing the work you have done
- Final Programming Assignment Topic: Energy Storm Code
- Hands-out and Template Code available on KTH-HPC GitHub
- The recommendation is to check them out and attempt them as the school progresses
  - You can ask TAs

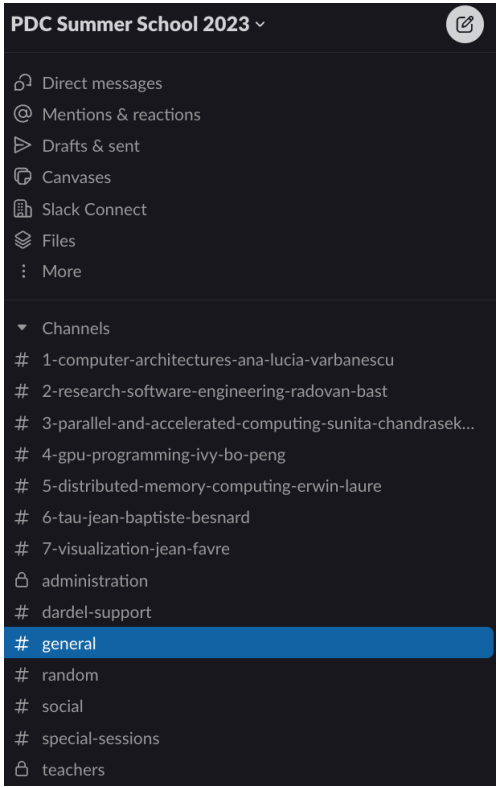
Various Information

- Attendance Certificates (**≠ 5.0 Credit Certificates**) will be distributed to successful students on the last day of the school.
- TAs helping during the hands-on sessions
- Wireless
  - EDUROAM
  - If you don't have EDUROAM, KTH Open
    - > Password will be distributed as needed
- Restrooms
- Material available on
  - the PDC summer school: https://www.pdc.kth.se/summer-school/2023/timetable-1.1226728
  - Slack

Slack PDC Summer School Workspace

To join:

- https://join.slack.com/t/pdcsummerschool2023/shared_invite/zt-20ri7pyfm-on6BKFBXaEvCNKKbjdrxiA



PDC Account for Dardel & GCP for Nvidia GPUs

- If you do not have a PDC account yet, we will fix this ASAP
  - Tell us NOW!
  - Have an ID handy
- For programming Nvidia GPUs, we will use a Google Cloud Platform
  - Need a Google Account

PDC Summer School Classroom

- All the lectures and hands-on are in E2

E2, Osquars backe 2

Hörsal

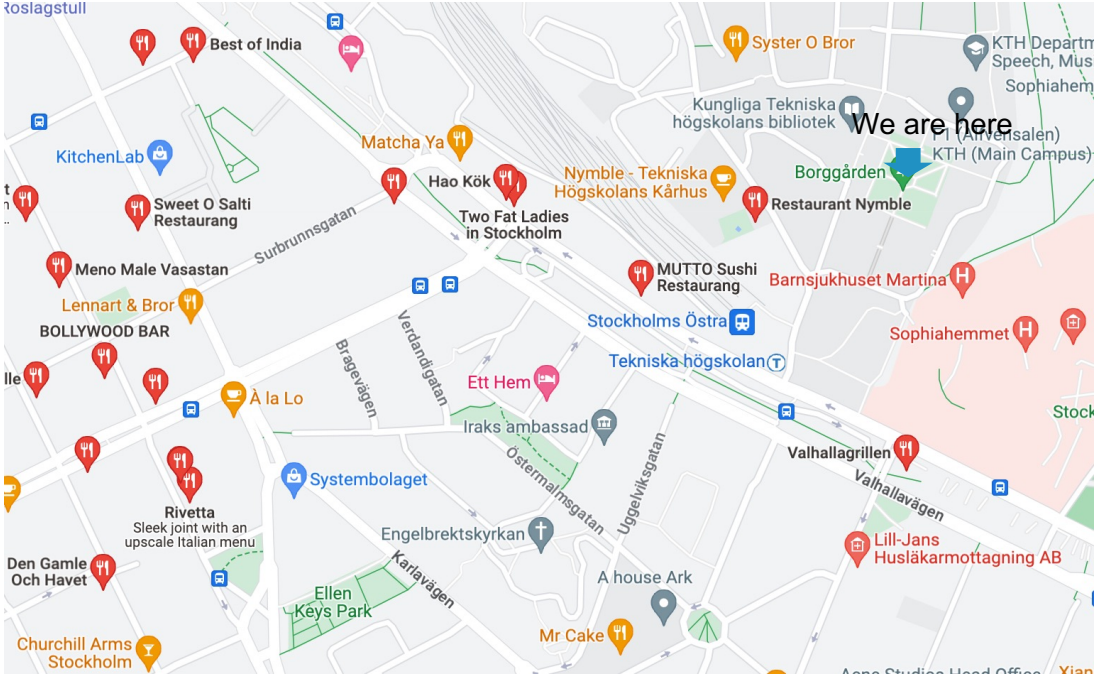
Accessible entrance: Osquars backe 2, floor 2
Secondary entrance: Lindstedtsvägen 3, floor 3
Room nr: 1337 **Code:** E2 **Floor:** 03
Building: E-huset, huvudbyggnaden, **Campus:** KTH Campus

- Dardel inauguration event on August 23 will be in F2

Tea Breaks & Lunches

- Tea breaks are provided in front of E2
- Lunches on your own
  - Except today when we provide lunch boxes for the picnic

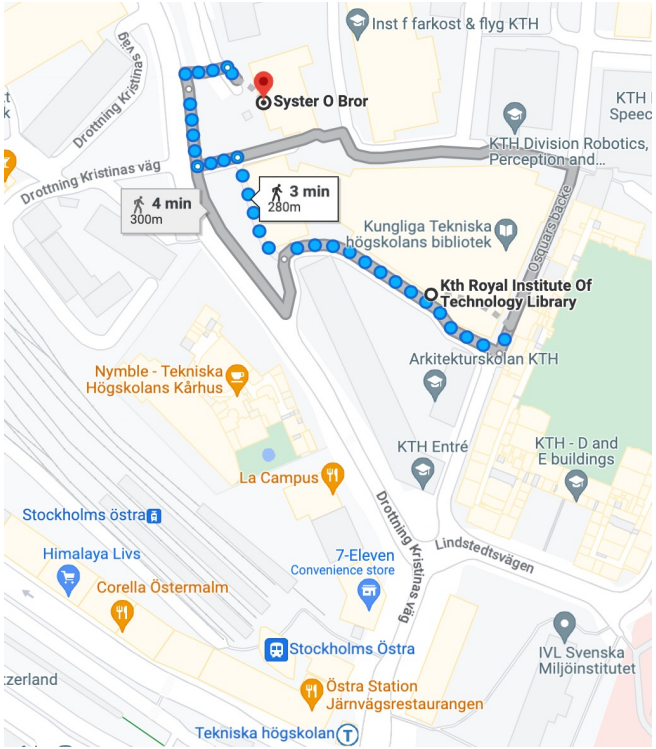
Restaurants in KTH Campus



Social Program

- Get-together picnic this lunch at 12.15
- Guided tours to the PDC computer room and Dardel Supercomputer
  - Three Groups – This Wed, Thu, and Friday
  - Check which group you are assigned to
  - Meet you in front of E2 for the tour
- Summing-up dinner on Thursday, August 23, at 17:30 at Syster o Bror

Social Dinner – Syster O Bror



Syster O Bror, Drottning Kristinas väg 24

Have interesting, challenging, fun two weeks!