

Program CECAM workshop sustainable computing

Day 1 – Monday 26

Morning chair: Johan Mentink

10:00 – 10:15 Welcome by CECAM

10:15 – 10:30 Welcome by organizers (Johan Mentink, RU)

10:30 – 11:15 SoA radio astronomy (Joeri van Leeuwen, Astron)

11:15 – 12:00 SoA particle physics (Roel Aaij, NIKHEF)

12:00 – 13:30 Lunch

Afternoon chair: Chris Broekema

13:30 – 14:00 Analog In-Memory Computing (Irem Boybat, IBM)

14:00 – 14:30 Digital In-Memory Computing (Bram Verhoef, AxeleraAI)

14:30 – 15:15 Ethical large-scale science (Jessica Dempsey, Astron)

interactive session supported by Chris

15:15 – 15:45 coffee break

15:45 – 17:00 discussion and writing session 1 & 2

1- large scale data processing

session leader: Raymond Oonk (SURF), notes Elisa Chiarotto (UL)

2- in-memory

session leader: Thomas Van Vaerenbergh (HPE), notes Sander Smink (UT)

17:00 – 18:30 welcome reception

Day 2 – Tuesday 27

Morning chair: Julita Corbolan

9:15 – 10:00 SoA Atomistic Modelling (Marjolein Dijkstra, UU)

10:00 – 10:30 coffee break

10:30 – 11:15 SoA AI for science (Nicolas Renaud, SURF)

11:15 – 12:00 SoA Material Science (Francesco Maresca, RUG)

12:00 – 13:30 Lunch

Afternoon chair: Aida Todri-Sanial

13:30 – 14:00 Spiking Neural Networks (Amir Zjajo, Innatera)

14:00 – 14:30 SpiNNaker2 hybrid computing platform (Mahmoud Akl, SpiNNcloud)

14:30 – 15:00 Computing near Memory (Subhasish Mitra, Stanford)

15:00 – 15:30 coffee break

15:30 – 17:00 discussion and writing session 3&4

3- Modelling and Simulation

session leader Nicolas Renaud (SURF), notes Rutger Berns (RU)

4- Neuromorphic Computing

session leader Mahmoud Akl (SpiNNcloud), notes Irene Bonati (SURF)

Day 3 – Wednesday 28

Morning chair: Rob van Nieuwpoort

9:15 – 10:00 SoA programming models (Sven-Bodo Scholtz, RU)

10:00 – 10:30 coffee break

10:30 – 11:15 SoA macro & micro energy profiling (Julita Corbolan, BSC)

11:15 – 12:00 SoA Scalable algorithms (Marcel van Gerven, RU)

12:00 – 13:30 Lunch

Afternoon chair: Chris Broekema

13:30 – 14:00 Probabilistic Computing (Louis Houtin, CEA LETI)

14:00 – 14:30 Spin-wave Computing (Johan Akerman, Uni Gothenburg)

14:30 – 15:00 Quantum inspired Computing (Mathias Möller, TUD)

15:00 – 15:30 coffee break

15:30 – 17:00 discussion and writing session 5&6

5- Software layer

Session leader Rob van Nieuwpoort, notes Edser Apperloo (TNO)

6- probabilistic/Quantum-inspired

Session leader Aida Todri-Sanial, notes Sebastian Feld (TUD)

Workshop Dinner (offered by Lorentz center)

Day 4 – Thursday

Morning chair: Johan Mentink

9:00 – 10:00 Presentations by writing groups

- in-memory computing (Thomas Van Vaerenbergh)
- neuromorphic computing (Mahmoud Akl)
- probabilistic/quantum-inspired computing (Aida Todri-Sanial)
- software (Rob van Nieuwpoort)

10:00 – 10:30 coffee break

10:30 – 12:00 Panel discussion (moderated by Johan Mentink)

- Large scale data processing (Chris Broekema)
- Modelling and simulation (Nico Reinoud)
- Modelling algorithms (Marcel van Gerven)

12:00 – 13:30 lunch

13:30 – 15:00 writing session: finalizing roadmap paper
(session leaders and organizers)
calls for proposals
steps beyond a roadmap paper

15:00 closing