

Frontiers in Computational Astrophysics: The Origin of Stars, Planets and Galaxies

13th - 18th July 2008, Ascona, Switzerland

Monday

Physical processes: radiative transfer

08:50	Welcome
09:00-09:30	Aake Nordlund: Techniques for Parallelizing Radiative Transfer
09:30-10:00	Richard Klein: The Radiation Hydrodynamics of Star Formation
10:00-10:20	Sergei Nayakshin: Dynamical Monte-Carlo radiative transfer for SPH
10:30-11:00	*Coffee*
11:00-11:30	Paul Shapiro: Cosmological Reionization: Radiative Feedback by the First Stars and Galaxies
11:30-12:00	Mika Juvola: Radiative transfer in the study of interstellar clouds
12:00-12:20	Andreas Pawlik: TRAPHIC - Radiative Transfer in Smoothed Particle Hydrodynamics Simulations
12:30-14:00	*Lunch*
14:00-14:20	Ilian Iliev: Simulating Cosmic Reionization at Large Scales
14:20-14:40	Antonella Maselli: CRASH: simulating cosmological radiative transfer
15:00-15:20	Daniel Whalen: Adaptive radiative transfer with primordial chemistry
15:20-15:50	Discussions
16:00-16:30	*Coffee*

Disks, Cosmic Rays & MHD

16:30-17:00	Michal Hanasz: Cosmic-ray driven dynamo in galactic disks: global vs. local models
17:00-17:20	Francesco Miniati: An efficient algorithm for cosmic-ray transport in large scale astrophysical flows
17:20-17:50	Giuseppe Lodato: Simulating warped accretion discs with SPH
17:50-18:20	Sebastien Fromang: Implementing the shearing box model in RAMSES
18:20-18:40	Ralf Kissmann: Accretion disc turbulence
18:40-19:00	David Clarke: Planar-splitting and super-Alfvenic turbulence
19:00-	Discussions
19:30	*Dinner*

Tuesday

Physical processes: modelling the ISM, star formation and galactic disks

09:00-09:30	Tom Abel: Making Stars and Galaxies with AMR
09:30-10:00	Keiichi Wada: Models of ISM on sub-kpc scales: Galactic central regions and disks
10:00-10:20	Stefanie Walch: The Formation and Early Evolution of Protostellar Disks around Low-Mass Stars
10:30-11:00	*Coffee*
11:00-11:30	Garreth Mellema: Dynamical Models of HII Regions
11:30-12:00	Nick Gnedin: A model for H ₂ formation and star-formation recipes
12:00-12:20	Rhianne Attwood: Simulating Prestellar Cores
12:30-14:00	*Lunch*
14:00-14:30	Thorsten Naab: Recent developments of the N-body/SPH code VINE
14:30-15:00	Vincenzo Antonuccio-Delogu: An exact algorithm for star formation in cosmological AMR codes
15:00-15:20	Claudio Dalla Vecchia: Simulating galactic outflows with kinetic supernova feedback
15:20-15:40	Debora Sijacki: BH growth and feedback in cosmological simulations
15:40-16:00	Alexei Razoumov: Galaxy formation with feedback on parsec scales
16:00-16:30	*Coffee*
16:30-17:00	Eelco van Kampen: A hybrid method for simulating galaxy evolution in clusters
17:00-17:30	Gerhard Hensler: Techniques of chemodynamical simulations: strengths and weaknesses
17:30-17:50	Takayuki Saitoh: A TreeGRAPE SPH code ASURA and its applications
17:50-18:10	Sukanya Chakrabarti: Spiral Structure of Disk Galaxies
18:10-18:40	John Dubinski: Disk Dynamics and Cosmology
18:40-	Discussions
19:30	*Dinner*
21:00	Beer, wine and poster viewing

Wednesday

Collisional systems

09:00-09:30	Simon Portegies Zwart: High performance N-body simulations on graphical processing units
09:30-10:00	Rainer Spurzem: Particle Based Direct Many-Body Simulations in Astrophysics
10:00-10:20	Steve McMillan: A Software Toolkit for Multiscale, Multiphysics Astrophysical Simulations
10:30-11:00	*Coffee*
11:00-11:30	Mordecai-Mark Mac Low: Solids in Protoplanetary Gas Disks
11:30-12:00	Roberto Capuzzo Dolcetta: Globular clusters as 'intermediate' N body systems
12:00-12:20	Discussion
12:30-14:00	*Lunch*

Afternoon off for sleeping, work, hiking, sightseeing...

19:30 *Barbeque in the grounds of Monte Verita*

Thursday

Techniques: Grids, SPH

09:00-09:30	Daniel Price: Smoothed Particle Hydrodynamics - a review
09:30-10:00	Romain Teyssier: AMR techniques
10:00-10:20	Alexei Kritsuk: Turbulence in molecular clouds
10:30-11:00	*Coffee*
11:00-11:30	James Wadsley: Entropy Production and Mixing in Numerical Astrophysics
11:30-12:00	Frazer Pearce: Quantitative comparison of hydrodynamics codes
12:00-12:30	Discussion led by Oscar Agertz
12:30-15:00	*Lunch* and ASTROSIM committee meeting

Parallelisation, integration, timestepping and force evaluation

15:00-15:30	Walter Dehnen: TBA
15:30-16:00	Ue-Li Pen: CubeP3M: Highly scalable network tolerant cosmological P3M
16:00-16:20	Paul Ricker: Solving the Poisson Equation on Multilevel Adaptive Meshes
16:30-17:00	*Coffee*
17:00-17:20	Thomas Guillet: A simple and efficient multigrid scheme for solving the Poisson equation in RAMSES
17:20-17:40	Thomas Quinn: Massively Parallel N-body simulations
17:40-18:00	Marcel Zemp: An optimum time-stepping scheme for N-body simulations
18:00-18:20	Atakan Gurkan: Resonant relaxation for S-stars
18:20-18:40	Prasenjit Saha: The post Newtonian effects of supermassive black holes
18:40-	Discussions
19:30	*Dinner*

Friday

Initial conditions, analysis and applications

09:00-09:30	Alexander Knebe: Halo Finding in Cosmological Simulations: needles in a haystack?
09:30-10:00	John Magorrian: Multimass initial conditions for collisionless N-body models
10:00-10:20	Joachim Stadel: Ghalo: a multibillion particle CDM halo
10:30-11:00	*Coffee*
11:00-11:20	Tom Theuns: A comparison between FLASH and GADGET for simulating galaxy clusters
11:20-11:40	Stefano Borgani: Chemical enrichment and feedback in simulations of galaxy clusters
11:40-12:00	Gustavo Yepes: Constrained realisations for cosmological simulations
12:00-12:30	Discussions
12:30-14:00	*Lunch*

End of conference