

Join us @ the PASC15 Conference

PASC15 provides an opportunity for scientists and practitioners to discuss key issues in the use of High Performance Computing (HPC) in branches of science that require computer modelling and simulations. The scientific program will offer invited lectures, minisymposia, contributed talks and poster presentations. The active participation of graduate students and postdocs is strongly encouraged.

PASC15

Platform for Advanced Scientific Computing Conference

Zürich
Switzerland

01-03 June 2015

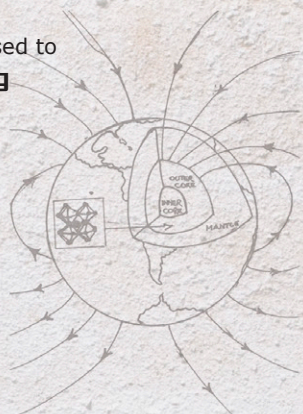
IMPORTANT DATES

January 30	Submission of abstracts for minisymposia
March 2	Submission of abstracts for contributed talks
March 30	Submission of abstracts for poster presentations
April 30	End of pre-registration

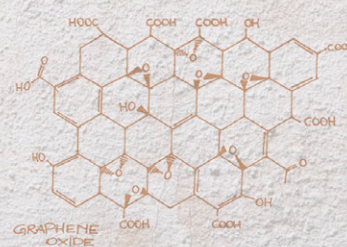
Conference information,
registration and submission
www.pasc15.org

Queries may be addressed to
pasc15@pasc-ch.org

Venue
ETH Zurich
Rämistrasse 101
8092 Zurich
Switzerland



quicksort(A, i, k):
if i < k:
 p = partition(A, i, k)
 quicksort(A, i, p-1)
 quicksort(A, p+1, k)

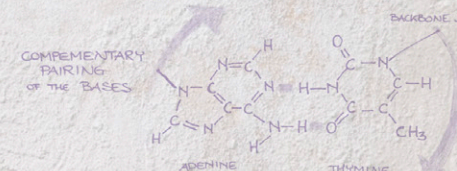


Contributions

Researchers from the academic and from the corporate world are invited to participate and present their research area in the form of minisymposia, contributed talks and/or poster presentations. PASC15 welcomes submissions in the following scientific fields:

- CLIMATE & WEATHER
- SOLID EARTH
- LIFE SCIENCE
- CHEMISTRY & MATERIALS
- PHYSICS
- COMPUTER SCIENCE & MATHEMATICS
- ENGINEERING
- EMERGING DOMAINS

METROPOLIS ALGORITHM
initialize x_i, n and s
for $i = 1 : (n-1)$ do
 while x_{i+1} not assigned do
 draw $z \in [0,1]$ and $u_i \in [-1,1]^d$
 $x_{\text{new}} = x_i + u_i s$
 if $f(x_{\text{new}})/f(x_i) \geq z$ then $x_{i+1} = x_{\text{new}}$
 end while
end for



Abstracts should describe original, interesting, and solid scientific content that is relevant to computational sciences and HPC. Cross-disciplinary approaches are highly encouraged.

Plenary Presentations

Towards Exascale Simulation of Turbulent Combustion

Jacqueline Chen, Sandia National Laboratories, USA

Materials Discovery and Scientific Design by Computation: a Revolution Still in the Making

Giulia Galli, University of Chicago, USA

Algorithmic Adaptations to Extreme Scale

David Keyes, King Abdullah University of Science and Technology, Saudi Arabia

Simulating Cosmic Structure Formation

Volker Springel, Heidelberg University, Germany

The Great Leap

Bjorn Stevens, Max-Planck-Institute for Meteorology, Germany

POISSON'S EQUATION

$$\Delta \phi = f$$

Δ = LAPLACE OPERATOR
 $f = g$ REAL OR COMPLEX-VALUED FUNCTIONS

$$\nabla^2 \phi = f$$

IN THREE-DIMENSIONAL CARTESIAN COORDINATES

$$\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2} \right) \phi(x,y,z) = f(x,y,z)$$

when $f=0$ we recover LAPLACE'S EQUATION

EULER EQUATION

$$\frac{\partial \rho}{\partial t} + \sum_{i=1}^3 \frac{\partial (\rho u_i)}{\partial x_i} = 0$$

$$\frac{\partial (\rho u_i)}{\partial t} + \sum_{j=1}^3 \frac{\partial (\rho u_i u_j)}{\partial x_j} + \frac{\partial p}{\partial x_i} = 0$$

$$\frac{\partial E}{\partial t} + \sum_{i=1}^3 \frac{\partial ((E+p)u_i)}{\partial x_i} = 0$$

i, j label the three cartesian components:
 $(x_1, x_2, x_3) = (x, y, z)$ and
 $(u_1, u_2, u_3) = (u, v, w)$

NAVIER-STOKES EQUATION

$$\rho \left(\frac{\partial \mathbf{v}}{\partial t} + \mathbf{v} \cdot \nabla \mathbf{v} \right) = -\nabla p + \mu \nabla^2 \mathbf{v} + \mathbf{f}$$

\mathbf{f} = body forces (gravity or centrifugal)