

PASC18

Platform for Advanced Scientific Computing Conference

Basel
Switzerland

2-4 July 2018



Join us @ the PASC18 Conference

PASC18 is the fifth edition of the PASC Conference series, an international platform for the exchange of competences in **scientific computing** and **computational science**, with a strong focus on methods, tools, algorithms, application challenges, and novel techniques and usage of high performance computing.

The technical program will feature keynotes, panels, paper presentations, minisymposia, and poster sessions. The theme of PASC18 is **Fast and Big Data, Fast and Big Computation**, with calls for contributions focusing particularly on the challenge of exposing and expressing massive parallelism in scientific problems to exploit heterogeneous parallelism in high performance computers.



Contributions

PASC18 welcomes submissions for **paper**, **minisymposium**, and **poster** contributions that present innovative research in scientific computing related to the following scientific domains:

- CHEMISTRY & MATERIALS
- LIFE SCIENCES
- PHYSICS
- CLIMATE & WEATHER
- SOLID EARTH DYNAMICS
- ENGINEERING
- COMPUTER SCIENCE & APPLIED MATHEMATICS
- EMERGING APPLICATION DOMAINS (E.G. SOCIAL SCIENCES, FINANCE, *ETC.*)

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  $u_i \in [-1,1]^d$ 
     $x_{new} = x_i + u_i s$ 
    if  $f(x_{new})/f(x_i) \geq z$  then  $x_{i+1} = x_{new}$ 
  while

```

Submission Deadlines

Minisymposia: November 26, 2017
 Papers: January 19, 2018
 Posters: February 4, 2018

Conference Chairs

Florina Ciorba *University of Basel, Switzerland*
 Erik Lindahl *Stockholm University, Sweden*

Program Chairs

Sabine Roller *University of Siegen, Germany*
 Jack Wells *Oak Ridge National Laboratory, US*

Conference information, submission and registration
pasc18.pasc-conference.org

Venue
Congress Center Basel, Basel, Switzerland

Queries may be addressed to
info@pasc-conference.org



$$\Delta g = f$$

$\Delta =$ LAPLACE OPERATOR
 f is g REAL OR COMPLEX-VALUED FUNCTIONS

$$\nabla^2 g = f$$

IN THREE-DIMENSIONAL CARTESIAN COORDINATES:

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

When $f=0$ we refer LAPLACE'S EQUATION

EULER EQUATION

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

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

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

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

