Dinner

Ratskeller Köpenick – August 22nd, 2012

Alt-Köpenick 21, 12555 Berlin.
http://ratskeller-koepenick.de/

How to get there: Take the Tram 60 to "Mahlsdorf Süd" or the Tram 61 to "S Köpenick". Get out at "Schlossplatz Köpenick" and walk 4 minutes to the restaurant.

Hasir Mitte – August 23nd, 2012

Oranienburger Str.4, 10178 Berlin.
http://www.hasir.de/eng/index.html

How to get there: Walk to the train station "S Adlershof" (or alternatively take the Tram 60 or 61), take the S9 (direction: "Pankow") or the S8 (direction: "Birkenwerder") and get out at "Ostkreuz". Change to S5 (direction: "Spandau"), S75 (direction: "Westkreuz") or S7 (direction: "Potsdam") and get out at "Hackescher Markt". The walking distance to the restaurant is 5 minutes.
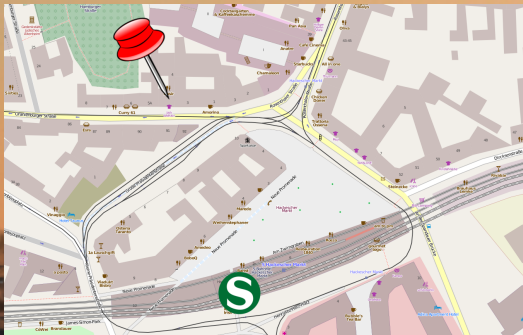
Please note that the dinners are not included in the workshop fee and have to be paid individually.

Location

Humboldt Universität zu Berlin
Department of Mathematics
Johann von Neumann Haus – Humboldt Kabinett
(1st floor, between "Haus 3" and "Haus 4")
Rudower Chaussee 25
12489 Berlin, Germany

Organizers

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http://www.mathematik.hu-berlin.de/~berlin-pum-workshop2012/

Berlin PUM Workshop 2012
Analysis and Application of the
GFEM, XFEM, MM

22 - 24 August 2012
Berlin, Germany

The intrinsic concept of the Partition of Unity Method (PUM) as devised by Babuška and Melenk may be found in many approaches such as Generalized Finite Element Methods (GFEM), eXtended Finite Element Methods (XFEM) and Meshless Methods (MM). Given this common concept, the aim of the Berlin PUM Workshop 2012 is to provide an opportunity for researchers and practitioners to discuss recent research results that may support a wide applicability in PUM related approaches. To build a foundation for these discussions, a number of experts has been invited to talk about their research. The covered topics will range from theoretical analysis of PUM based methods to applications and aspects of implementation.

Program

Wednesday (August 22nd, 2012)

09:00-10:00	*Registration*
10:00-10:15	*Opening*
10:15-11:15	**J.M. Melenk**
	Numerical analysis for meshless methods: A survey
11:15-11:30	*Coffee Break*
11:30-12:30	**M.A. Schweitzer**
	Generalized Finite Element Methods – Enrichment, Adaptivity, Robustness
12:30-14:00	*Lunch Break*
14:00-14:30	**Y. Sudhakar**, J.P. Moitinho de Almeida, W.A. Wall
	A simple method for integration over enriched elements in PUM
14:30-15:00	**M. Shadi Mohamed**, M. Seaid, J. Trevelyan, O. Laghrouche
	Partition of unity finite element for solving time dependent heat transfer problems
15:00-15:30	**S. Mahmood**, O. Laghrouche, A. El-Kacimi, J. Trevelyan
	The partition of unity method for elastic wave problems in 3D
15:30-16:00	*Coffee Break*
16:00-16:30	**F.A. Faisal**, H.J. Al-Gahtani
	RBF meshless methods for Navier-Stokes equations

16:30-17:00	**E. Toroshchin**, O. Iliev
	Coupling of meshfree and finite volume discretizations for flow simulations in pleated filters
17:00-17:30	*Coffee Break*
17:30-18:30	**Y. Renard**
	The mathematical analysis of XFEM
19:30	*Joint Dinner (Ratskeller Köpenick)*

Thursday (August 23nd, 2012)

09:00-10:00	**C.A. Duarte**
	The Generalized Finite Element Method as a framework for multiscale structural analysis
10:00-10:15	*Coffee Break*
10:15-11:15	**S. Bordas**
	Multiscale fracture, model reduction, enrichment and real-time simulations of cutting
11:15-11:30	*Coffee Break*
11:30-12:00	**P. Henning**, M. Ohlberger, B. Schweizer
	An adaptive multiscale finite element method
12:00-12:30	**D. Peterseim**
	Finite Element Computational Homogenization of Multiscale Elliptic Problems
12:30-14:00	*Lunch Break*
14:00-14:30	**M. Joulaian**, A. Düster
	Adaptive local enrichment for the finite cell method
14:30-15:00	**S. Amdouni**, M. Moakher, Y. Renard
	A local projection stabilization of fictitious domain method for elliptic boundary value problems
15:00-15:30	**A. Byfut**, A. Schröder
	Multi-level unsymmetric hanging nodes in hp-adaptive GFEM
15:30-16:00	*Coffee Break*
16:00-16:30	**K. Nissen**, V. Gravemeier, W.A. Wall
	Information-flux methods: Stable schemes for convection-dominated problems

16:30-17:00	**M. Winklmaier**, W.A. Wall
	A semi-Lagrangean time-integration approach for fixed-grid based flow problems in the XFEM
17:00-17:30	**B. Schott**, W.A. Wall
	A stabilized XFEM based fixed-grid approach for fluids with moving boundaries
17:30-17:45	*Coffee Break*
17:45-18:45	**J.M. Melenk**
	Operator adapted BEM for the Helmholtz equation
20:00	*Joint Dinner (Hasir Mitte)*

Friday (August 24nd, 2012)

09:00-10:00	**S. Bordas**
	Simple advances in partition of unity enriched methods and implicit surface representation
10:00-10:15	*Coffee Break*
10:15-11:15	**Y. Renard**
	The contact condition on crack lips with XFEM
11:15-11:30	*Coffee Break*
11:30-12:00	**G. Bricteux**, E. Marchandise, J.-F. Remacle
	Alternative methods to represent embedded interfaces in a mesh
12:00-12:30	**Ch.B. Davis**, S.C. Brenner, L.-Y. Sung
	A generalized finite element method for the displacement obstacle problem of clamped Kirchhoff Plates
12:30-14:00	*Lunch Break*
14:00-14:30	**B. Dompierre**, B. Berthoul, M. Duflot, H. Minnebo
	Non-linear crack initiation and propagation
14:30-15:30	**M.A. Schweitzer**
	Partition of Unity Methods – Stability, Fast Solvers, Parallelization
15:30-15:45	*Closing*