

# Friday, June 29, 2012 – AM

## Plenary Lectures P13

Location: **Amphi**

Chairman: **Susanne Brenner**

8:30-9:15 : Ralf Hiptmair  
Novel Multi-Trace Boundary Element Methods for Scattering

## Plenary Lectures P14

Location: **Amphi**

Chairman: **Susanne Brenner**

9:15-10:00 : Michael Holst  
Error Estimates and the Finite Element Exterior Calculus for Critical Exponent Problems in Geometric Analysis and General Relativity

## Mini Symposium M17P2: Domain Decomposition Methods based on Robin Conditions for Large and / or Nonlinear Problems

Location: **Amphi**

Chairman: **Heiko Berninger, Sébastien Loisel, Oliver Sander**

10:35-11:00 : Soheil Hajian  
Discontinuous Galerkin, Block Jacobi and Schwarz Methods

11:00-11:25 : Ronald Haynes  
An Optimized Schwarz Method for the Generation of Equidistributed Grids

11:25-11:50 : Joel Phillips  
Schwarz Methods for Plane Wave Discontinuous Galerkin Methods

11:50-12:15 : Yingxiang Xu  
The Influence of Interface Curvature on Transmission Conditions in Domain Decomposition Methods

## Mini Symposium M1 : Finite Element Packages with Domain Decomposition Solvers

Location: **Markov**

Chairman: **Frédéric Hecht, Frédéric Nataf, Christophe Prud'homme**

10:35-11:00 : Frédéric Hecht  
Some Ways to Implement Domain Decomposition Methods in Freefem++

11:00-11:25 : Pierre Jolivet  
Multilevel Spectral Coarse Space Methods in Freefem++

11:25-11:50 : Christophe Prud'homme  
Domain Decomposition Methods in Feel++

11:50-12:15 : Abdoulaye Samake  
Substructuring Preconditioners for the Mortar Method in Feel++

## Mini Symposium M19P2: Domain Decomposition in Computational Cardiology

Location: **Petri**

Chairman: **Rolf Krause and Luca Pavarino**

10:35-11:00 : [Maxime Sermesant](#)  
[Interactive Electromechanical Model of the Heart for Patient-Specific Simulation](#)

11:00-11:25 : Gernot Plank  
GPU Accelerated Strongly Scalable Simulations of Cardiac electro-mechanics

11:25-11:50 : Ricardo Ruiz Baier  
An Eulerian Finite Element Method for the Simulation of Cardiomyocyte Active Contraction

11:50-12:15 : [Martin Weiser](#)  
[Delayed Residual Compensation for Bidomain Equations](#)

## Mini Symposium M4 : On the Origins of Domain Decomposition Methods

Location: **Turing**

Chairman: **Martin J. Gander**

10:35-11:00 : Martin J. Gander  
On the Origins of the Alternating Schwarz Method

11:00-11:25 : Xuemin Tu  
Origin of Iterative Substructuring Methods

11:25-11:50 : Francois-Xavier Roux  
FETI: Finite Element Tearing and Interconnecting

11:50-12:15 : Olof Widlund  
Early Work on Two-Level Schwarz Algorithms and where it had led us

## **Mini Symposium M12 : Domain Decomposition Techniques in Life Science Modeling and Simulation**

**Location: I50**

**Chairman: Luca Gerardo-Giorda and Victorita Dolean**

- 10:35-11:00 : Oliver Rheinbach  
Advances of FETI Methods in Biomechanics
- 11:00-11:25 : Simone Scacchi  
Parallel Bidomain Solvers for Cardiac Excitation
- 11:25-11:50 : Nejib Zemzemi  
Decoupled Time-Marching Schemes in Computational Cardiac Electrophysiology and ECG Numerical Simulation
- 11:50-12:15 : Gwenol Grandperrin  
Parallel Preconditioners for Solving Fluid-Structure Interactions Problems in Hemodynamics

## **Contributed Talks C12: Optimization Methods/Probabilistic Methods**

**Location: I51**

**Chairman: Hui Zhang**

- 10:35-11:00 : Andreas Langer  
Domain Decomposition Methods for a Class of Non-smooth Convex Variational Problems
- 11:00-11:25 : Firmim Andzembe Okoubi  
Domain Decomposition with Nesterov's Minimization Method
- 11:25-11:50 : Francisco Bernal  
A Meshfree Scheme for PDEs on Large Domains using Probabilistic Domain Decomposition
- 11:50-12:15 : Samia Riaz  
A Domain Decomposition Method for Elliptic Variational Inequalities

# Friday, June 29, 2012 – PM

## Contributed Talks C15: Multigrid Methods

Location: Amphi

Chairman: James Brannick

- 14:05-14:30 : Kab Seok Kang  
A Parallel Multigrid Solver on a Structured Triangulation of a Hexagonal Domain
- 14:30-14:55 : Pawan Kumar  
Parallel Aggregation Based Algebraic Multigrid
- 14:55-15:20 : Lori Badea  
Multigrid Method with Constraint Level Decomposition for Variational Inequalities with Contraction Operators

## Contributed Talks C13: FETI Methods

Location: Markov

Chairman: François-Xavier Roux

- 14:05-14:30 : Leszek Marcinkowski  
A Parallel Preconditioner for FETI-DP Method for a Crouzeix-Raviart Discretization of an Elliptic Problem
- 14:30-14:55 : Ange Toulougoussou  
Schur Complement Methods for the Solution of the Discrete Stokes System with Continuous Pressure
- 14:55-15:20 : Hui Zhang  
Optimized Interface Preconditioners for the FETI Methods
- 15:20-15:45 : Christian Rey  
Stopping Criterion for FETI Solver based on an Evaluation of the Discretization Error

## Contributed Talks C16: Finite Element Method for Domain Decomposition

Location: Petri

Chairman: Marina Vidrascu

- 14:05-14:30 : Patrick Le Tallec  
Multidomain Calculations with Embedded Interfaces
- 14:30-14:55 : Thomas Dickopf  
Evaluating Local Approximations of the  $L^2$ -Orthogonal Projection Between Non-nested Finite Element Spaces
- 14:55-15:20 : Frédéric Magoulès  
A Bacteria Evolution-based Partitioning Scheme for the Parallel Solution of Problems in Computational Mechanics
- 15:20-15:45 : Debasish Pradhan  
A Robin-Type Non-Overlapping Domain Decomposition Procedure for Second Order Parabolic Problems

## Contributed Talks C17: Non-matching Grids/Nonconforming Discretization

Location: Turing

Chairman: Guillaume Houzeaux

- 14:05-14:30 : Kirill Pichon Gostaf  
Finite Element Analysis of Multi-Component Assemblies: CAD - based Domain Decomposition
- 14:30-14:55 : Ajit Patel  
Mortar Finite Element Methods for Hyperbolic Problems
- 14:55-15:20 : Eliseo Chacón Vera  
Stabilization of a FETI-DP Mortar Method for the Stokes Problem
- 15:20-15:45 : Beatriz Eguzkitza  
A Chimera Method applied to Computational Solid Dynamics