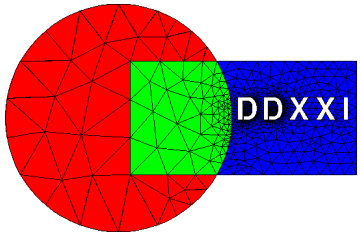
The Twenty First International Conference on Domain Decomposition Methods

INRIA Rennes-Bretagne Atlantique
Campus de Beaulieu, 35042 Rennes Cedex

June 25–29, 2012

Version Date: June 27, 2012



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DD 21 Schedule

M T W T F	Monday, June 25, 2012					
7:45-8:45	Registration					
8:45-9:15	Opening					
9:15-10:00	Plenary P1 (Chair: Ralf Kornhuber) Laurence Halpern					
10:00-10:30	Coffee Break					
10:30-12:15	M16 P1 Amphi	M10 P1 Markov	M14 Petri	M6 P1 Turing	M5 I50	C1 I51
	Frédéric Hecht Alfio Quarteroni Caroline Japhet Zakaria Belhachmi	Maksymilian Dryja Juan Galvis Hyea Hyun Kim Chang-Ock Lee	Ismael Herrera Luis Miguel de la Cruz Alberto Rosas Iván Contreras	Heiko Berninger Pablo Javier Blanco Eva Casoni Paola Gervasio	Martin J. Gander Clark Dohrmann Jörg Willems Kévin Santugini	Jaroslav Haslinger Brahim Nouiri Ihor I. Prokopyshyn Alexandros Markopoulos
12:15-14:00	Lunch					
14:00-14:45	Plenary P2 (Chair: Ralf Kornhuber) Géraldine Pichot					
14:45-15:30	Plenary P3 (Chair: Ralf Kornhuber) Axel Klawonn					
15:30-16:00	Coffee Break					
16:00-18:10	M16 P2 Amphi	M10 P2 Markov	M13 P1 Petri	M6 P2 Turing	M8 I50	C2 I51
	Christian Waluga Yvon Maday François-Xavier Roux Oldřich Vlach Todd Arbogast	Jungho Lee L. Beirão da Veiga Xuemin Tu Olof Widlund Jun Zou	Victorita Dolean Nicole Spillane Jinchao Xu Juan Galvis Clark Dohrmann	Simona Perotto Franz Rammerstorfer Human Rezaijafari Anton Schiela	Eric Blayo Bas van 't Hof Mart Borsboom Fred Wubs	Daniel Choi Vincent Visseq Geoffrey Desmeure Julien Riton Philippe Karamian
19:00-20:00	Welcoming cocktail					

M T W T F	Tuesday, June 26, 2012					
8:30-9:15	Plenary P4 (Chair: Alfio Quarteroni) Marcus Sarkis					
9:15-10:00	Plenary P5 (Chair: Alfio Quarteroni) Jin-Fa Lee					
10:00-10:30	Coffee Break					
10:30-12:15	M7 P1 Amphi	M15 P1 Markov	M13 P2 Petri	M9 P1 Turing	M11 P1 I50	C6/C18 I51
	Rémi Abgrall Michel Bercovier Victor M. Calo Krishan P. S. Gahalaut	Yvon Maday Michael Minion Rim Guetat Felix Kwok	Petr Vanek Robert Scheichl James Brannick Marco Buck	Lea Conen Hui Zhang Erwin Veneros Bertrand Thierry	Patrick Le Tallec Mohammed Lemou Emmanuel Frénod Heiko Berninger	Marco Discacciati Marina Vidrascu Christian Engwer K. C. Park (C18)
12:15-14:00	Lunch					
14:00-14:45	Plenary P6 (Chair: David Keyes) Clemens Pechstein					
14:45-15:35	M7 P2 Amphi Christian Hesch Stefan Kleiss	C4 Markov Chris Stolk Dalibor Lukáš	C19 Petri Hatem Ltaief Menno Genseberger	C5 Turing Jonathan Youett Manel Tayachi	C20 I50 Shuo Zhang Cédric Lachat	C21 I51 Marta Jarošová Michal Merta
15:35-16:00	Coffee Break					
16:00-17:45	M7 P3 Amphi	M15 P2 Markov	M13 P3 Petri	M9 P2 Turing	M11 P2 I50	C7 I51
	Angela Kunoth Luca F. Pavarino Satyendra Tomar Rafael Vazquez	Stefan Güttel Martin J. Gander Jacques Laskar Julien Salomon	Florian Thomines Ivan Graham Jan Nordbotten Xiaozhe Hu	Olaf Steinbach Jin-Fa Lee Eric Darrigrand Yogi Erlangga	François Golse Giacomo Dimarco Sudarshan Tiwari Jérôme Michaud	Daniel Szyld Feng-Nan Hwang Santiago Badia Laurent Berenguer
18:00-22:00	Scientific committee meeting					

M T W T F	Wednesday, June 27, 2012					
8:30-9:15	Plenary P7 (Chair: Laurence Halpern) Hyea Hyun Kim					
9:15-10:00	Plenary P8 (Chair: Laurence Halpern) Beatrice Riviere					
10:00-10:30	Coffee Break					
10:30-12:15	M2 P1 Amphi	M15 P3 Markov	M13 P4 Petri	M9 P3 Turing	C3 I50	C8 I51
	Oliver Sander Thi Thao Phuong Hoang Frédéric Nataf Zhangxin Chen	Bankim Mandal Mohamed Kamel Riahi Ron Haynes Olga Mula Hernandez	Baptiste Poirriez Thomas Dufaud Svetozar Margenov Johannes Kraus	Rosalie Belanger-Rioux Achim Schadle Ana Alonso Rodriguez Martin Huber	Florence Hubert Lahcen Laayouni Erell Jamelot Frédéric Magoulès	Aivars Zemitis Leonardo Baffico François Pacull Daniel Loghin
12:15-14:00	Lunch					
14:00-14:45	Plenary P9 (Chair: Petter Bjørstad) Xiao-Chuan Cai					
14:45-15:30	Plenary P10 (Chair: Petter Bjørstad) Eberhard Bänsch					
15:30-16:00	Coffee Break					
16:00-17:45	M2 P2 Amphi	M18 P1 Markov	M20 Petri	M9 P4 Turing	C9 I50	C10 I51
	Bernd Flemisch Paul-Marie Berthe J.-B. Apoung Kamga Anthony Michel	Alexandre Pieri Kolja Brix Christoph Lehrenfeld Eun-Hee Park	Talal Rahman Juan Galvis Robert Scheichl Rui Du	Ronan Perrussel Jack Poulson Zhen Peng Stéphane Lanteri	Chao Yang Felix Kwok Martin Cermak D. Tromeur-Dervout	Jyri Leskinen M. Khaled Gdoura Thu Huyen Dao Guillaume Houzeaux

M T W T F	Thursday, June 28, 2012					
8:30-9:15	Plenary P11 (Chair: Olof Widlund) Blanca Ayuso de Dios					
9:15-10:00	Plenary P12 (Chair: Olof Widlund) Chen-Song Zhang					
10:00-10:30	Coffee Break					
10:30-12:15	M17 P1 Amphi	M18 P2 Markov	M19 P1 Petri	M3 Turing	C11/C18 I50	C14 I51
	Sébastien Loisel Florence Hubert Oliver Sander Minh Binh Tran	Paola F. Antonietti Andrew Barker Guido Kanschat Ludmil T. Zikatanov	Luca Gerardo-Giorda Dorian Krause Stefano Zampini Charles Pierre	James Adler Pavel Bochev Fleurianne Bertrand Steffen Münzenmaier	Noha Makhoul-Karam Daniel Ruprecht Rolf Krause Ulrich Langer (C18)	Petros Aristidou Rodrigue Kammogne Frederic Plumier David Cherel
12:15-13:30	Lunch					
13:30-22:00	Excursion and dinner					

M T W T F	Friday, June 29, 2012					
8:30-9:15	Plenary P13 (Chair: Susanne Brenner) Ralf Hiptmair					
9:15-10:00	Plenary P14 (Chair: Susanne Brenner) Michael Holst					
10:00-10:30	Coffee Break					
10:30-12:15	M17 P2 Amphi	M1 Markov	M19 P2 Petri	M4 Turing	M12 I50	C12 I51
	Soheil Hajian Ronald Haynes Joel Phillips Yingxiang Xu	Frédéric Hecht Pierre Jolivet Christophe Prud'homme Abdoulaye Samake	Martin Weiser Gernot Plank Ricardo Ruiz Baier Maxime Sermesant	Martin J. Gander Xuemin Tu Francois-Xavier Roux Olof Widlund	Oliver Rheinbach Simone Scacchi Nejib Zemzemi Gwenol Grandperrin	Andreas Langer Firmim Andzembe Okoubi Francisco Bernal Samia Riaz
12:15-14:00	Lunch					
14:00-15:45	C15 Amphi	C13 Markov	C16 Petri	C17 Turing		
	Kab Seok Kang Pawan Kumar Lori Badea	Leszek Marcinkowski Ange Toulougoussou Hui Zhang Christian Rey	Patrick Le Tallec Thomas Dickopf Debasish Pradhan Frédéric Magoulès	Kirill Pichon Gostaf Ajit Patel Eliseo Chacón Vera Beatriz Eguzkitza		
15:45-16:15	Closing					

Bus schedule

The INRIA research laboratory is located on the campus of Beaulieu "Campus de Beaulieu" in the east of Rennes. INRIA Bus Station is "Tournebride".

1. From "République" Bus Station

(it takes about 10-15 min. to go to INRIA)

1.1 Departures hours from "République" Bus Station, to come to INRIA

- **Bus: #4 (direction "Beaulieu Atalante")**

05h	06h	07h	08h	09h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h	00h
35a	05	00	03	01	07	08	08	04	04	07	01	05	06	06	00	00	00	00	05
45	15a	12	12	08	14	17	18	12	13	16	10	12	15	13	10	10	15	15	20
45	25	22	21	15	23	25	27	21	22	25	20	18	24	21	20	25	30	35	35
55a	40	29	30	22	32	33	36	30	31	33	29	26	33	28	30	40	45	50	
		33	38	30	41	40	46	38	40	42	38	34	41	36	40				
		37	46	38	50	48	55	47	48	52	47	42	47	42	50				
		41	53	45	59	58		56	57		56	50	53	50					
		47		52								58	59						
		54		59															

- **Bus: #6 (direction "Cesson Sévigné - Base de Loisirs")**

05h	06h	07h	08h	09h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h	00h
45	25	05	01	01	06	06	06	08	09	08	08	02	03	01	00	25	10	00	35
	45	16	11	11	21	21	22	23	24	24	20	12	13	09	20			45	
		30	21	21	36	36	38	38	38	39	30	22	23	21	35				
		41	31	30	51	51	53	54	53	54	40	32	33	33	55				
		51	41	40							52	42	43	45					
			51	52								53	51						

- **Bus: #67 (direction "Brecé")**

06h	07h	08h	09h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h
40	15	15	15	05	00	25	05	20a	15a	10	10	10	12	10
	35	35	34a	30a	25a	40a	25a	50	50	30	30	32	40	40
	55	55a			55		55			55	50	52		

1.2 Departures hours from "Tournebride" Bus Station, to go back to Rennes downtown

- **Bus: #4 (direction "Beauregard")**

05h	06h	07h	08h	09h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h
32	12	05	00	06	07	07	06	01	05	05	06	06	02	06	06	02	01	06
	30	18	08	14	16	16	15	11	14	14	11	15	10	15	17	16a	21a	21a
	44	25	15	23	24	25	24	20	23	23	18	24	18	25	32	31	36	36
		32	23	32	32	34	33	29	30	32	26	33	26	35	47a	46a	51a	56a
		39	31	41	40	42	43	38	39	41	34	39	34	45				
		46	39	50	49	50	52	47	48	50	42	45	42	55				
		54	48	58	58	58		56	56	58	50	53	50					
			57								58		58					

- **Bus: #6 (direction "Saint Jacques Morinais")**

05h	06h	07h	08h	09h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h	00h
33	13	03	01	03	00	14	14	14	00	00	00	08	06	01	14	13	01	36	21
	43	18	11	16	14	29	29	30	15	15	10	18	15	18	41		46		
		29	21	31	29	44	44	45	30	30	20	26	26	34					
		41	31	45	44	59	59		45	40	29	36	37	54					
		51	41		59					50	38	46	48						
			51								47	56							
											58								

- **Bus: #67 (direction "Rennes - République")**

06h	07h	08h	09h	10h	11h	12h	13h	14h	15h	16h	17h	18h	19h	20h
28	00	12	14	11	06	01	08	01	31	30	11	13	12	23
	18	32	35	37	32	23	38	32	56	49	31	32	30	
	39	55	55			48		55			51	52	53	
	56													

For Bus maps, please click on the blue links

For more information, please visit Star - public transportation service (only in French)

2. From Rennes train station, northern exit "Gare nord"
(it takes about 11 min. to go to INRIA with #41express)

2.1 Departures hours from "Gares" Bus Station, to come to INRIA

- Bus: #41express (direction "ZAC Saint Sulpice")

07h	08h	09h
35	10	05
45	27	
55	42	

2.2 Departures hours from "Tournebride" Bus Station, to go back to Rennes train station

- Bus: #41express (direction "Gares")

16h	17h	18h
12	12	14
32	32	34
52	54	54

2.3 Other possibilities to come to INRIA from Rennes train station

- **Subway+bus:** take the subway at the Railway station "Gares" towards "J.F. Kennedy" and get out at "République". Just at the exit, in front of the "République" building, you will find the bus stop for the bus lines #6 (direction "Cesson Sévigné - Base de Loisirs"), #4 (direction "Beaulieu Atalante"), #67 (direction "Brecé"). For more details, please see the previous section 1.1. Get out at the "Tournebride" bus stop.

- **Walk+bus:** walk along the Janvier avenue up to the Vilaine river. Turn left (Quai Zola): the bus stop (lines #6, #4, #67) is close to the Museum ("Musée Beaux Arts" bus stop). Please see the previous section 1.1; "Musée Beaux Arts" bus stop is only 1 minutes by bus from "République" bus stop). Get out at the "Tournebride" bus stop.

3. From Mercure Hotel Rennes centre Gares to INRIA

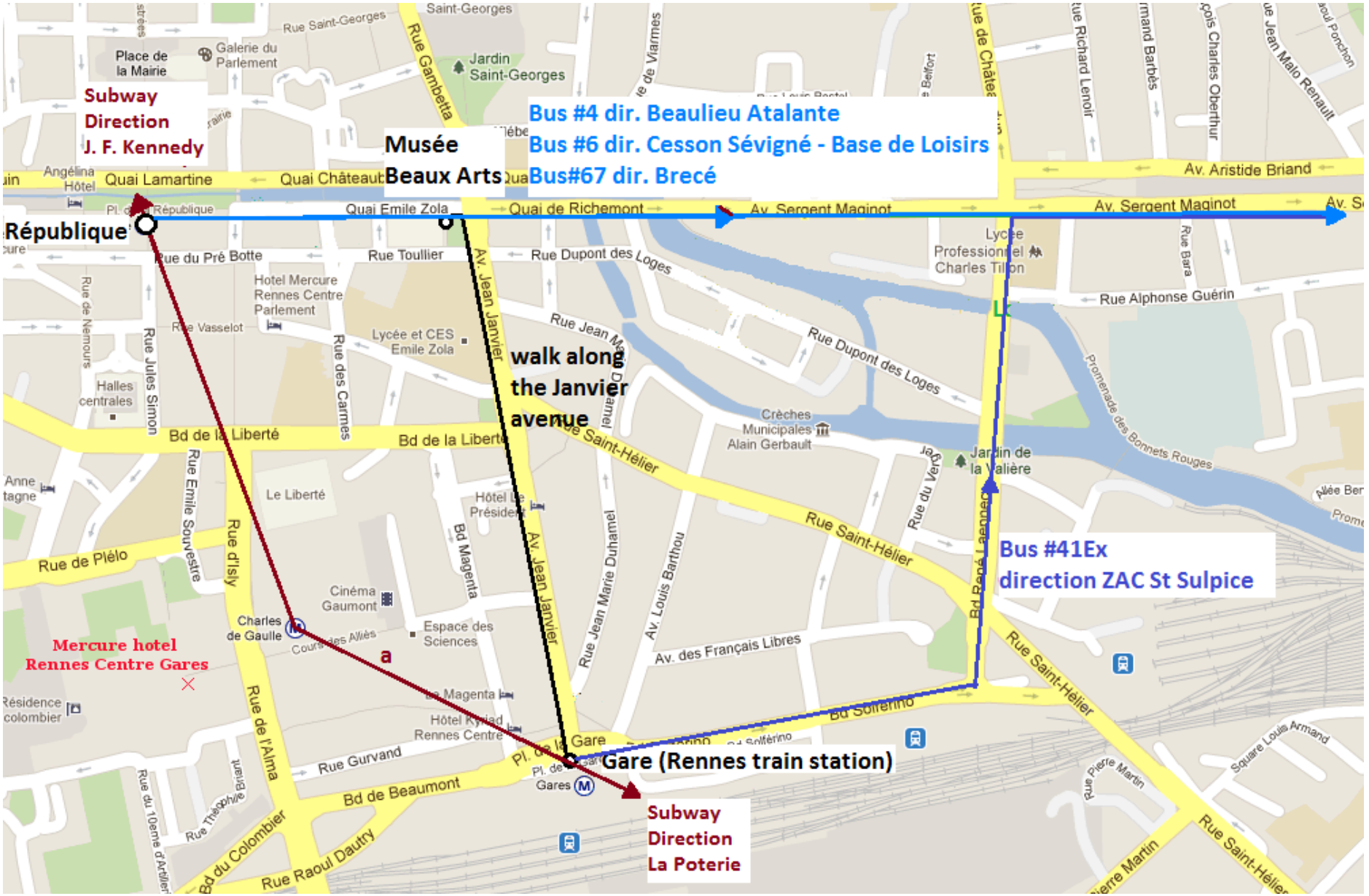
- either go to "République" (by walk or with the subway at station "Charles de Gaulle" direction "J. F. Kennedy"). Once at "République", take the bus #4 direction "Beaulieu Atalante" or bus #6 direction "Cesson-Sévigné - Base de Loisirs" or bus #67 direction "Brecé" as indicated above.

- or go to Gare (Rennes train station) (by walk or with the subway at station "Charles de Gaulle" direction "La Poterie") and take the bus #41 Ex direction "ZAC St Sulpice". Please check the schedule of the bus #41Ex as there are fewer departures than the buses stopping at République station.

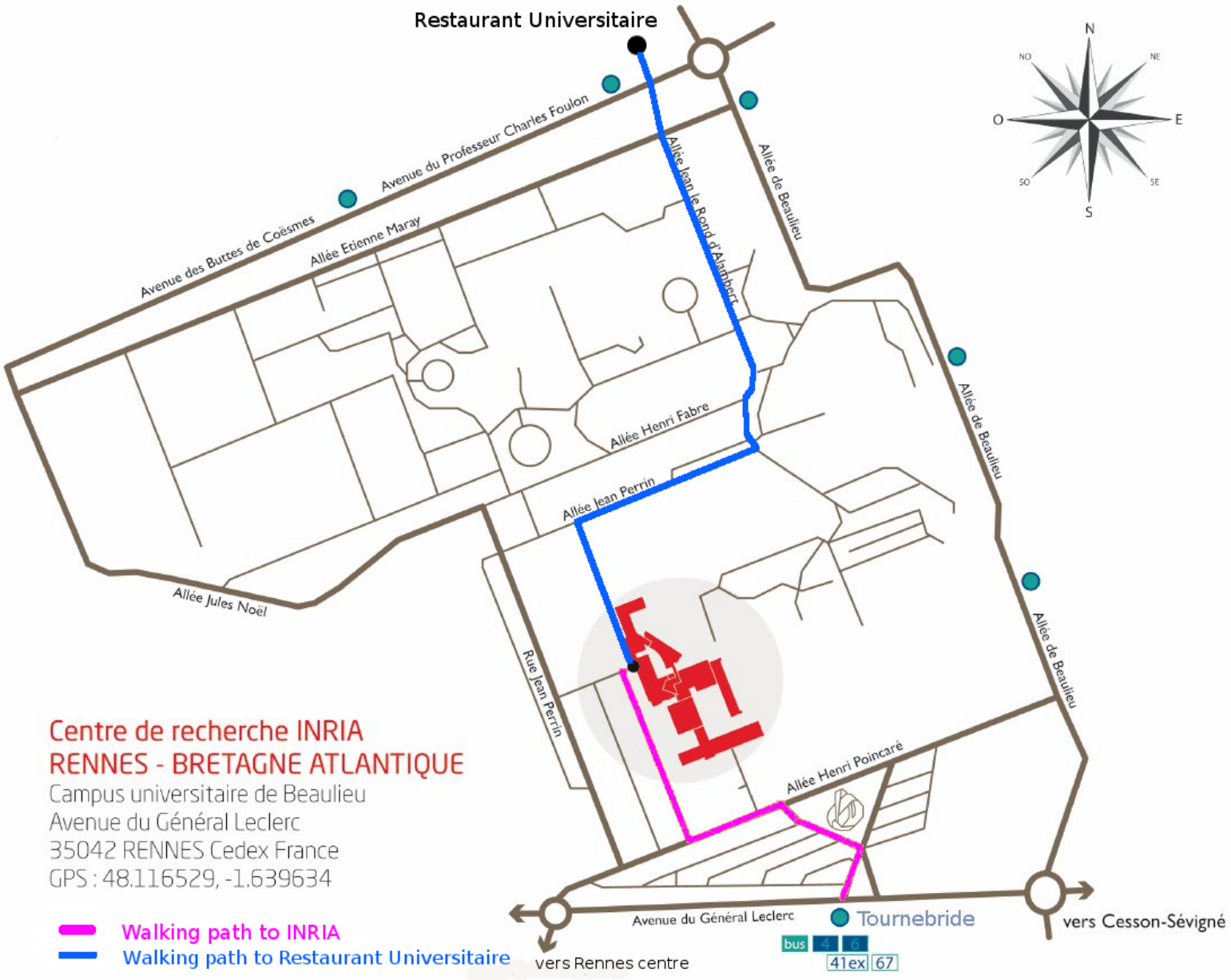
For Bus maps, please click on the blue links

For more information, please visit Star - public transportation service (only in French)

Rennes centre Map with information to go to INRIA



INRIA Map


Restaurant Universitaire
Avenue du Professeur Charles Foulon
Avenue des Buttes de Coësmes
Allée Etienne Maray
Allée Jean le Rond d'Alembert
Allée de Beaulieu
Allée Henri Fabre
Allée Jean Perrin
Allée Jules Noël
Rue Jean Perrin
Allée de Beaulieu
Allée de Beaulieu
Allée Henri Poincaré
Avenue du Général Leclerc
Tournebride
bus 4 6
41ex 67
vers Cesson-Sévigné
vers Rennes centre
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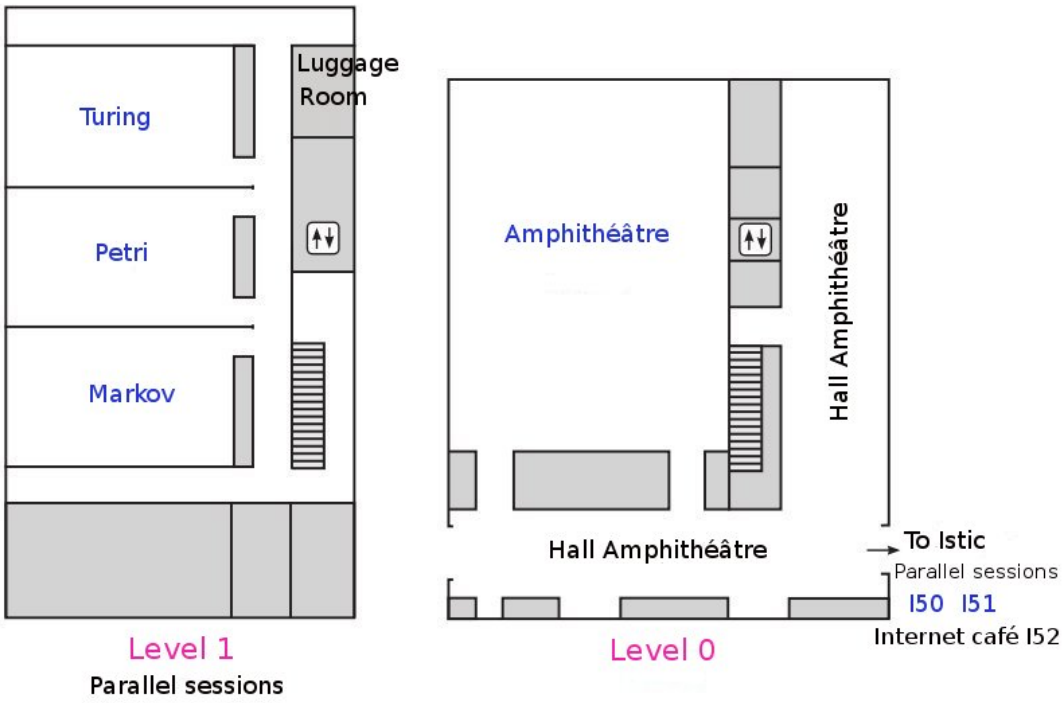
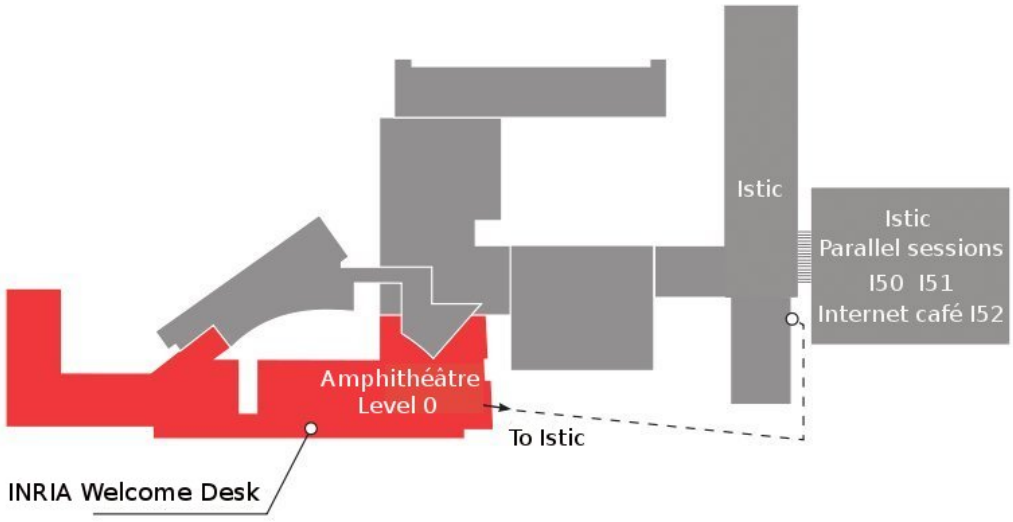
Centre de recherche INRIA
RENNES - BRETAGNE ATLANTIQUE
Campus universitaire de Beaulieu
Avenue du Général Leclerc
35042 RENNES Cedex France
GPS : 48.116529, -1.639634
Walking path to INRIA
Walking path to Restaurant Universitaire

DD21 Map


Luggage
Room
Turing
Petri
Markov
Level 1
Parallel sessions
Amphithéâtre
Hall Amphithéâtre
Hall Amphithéâtre
To Istic
Parallel sessions
I50 I51
Internet café I52
Level 0


Istic
Istic
Parallel sessions
I50 I51
Internet café I52
Amphithéâtre
Level 0
To Istic
INRIA Welcome Desk

Schedule at a Glance

Time	Event	Location
	Monday, June 25	
7:45-8:45	Registration	INRIA Reception
8:45-9:15	Opening Remarks	Amphi
9:15-10:00	Plenary (P1 - Laurence Halpern)	Amphi
10:00-10:30	Coffee Break	
10:30-12:15	Parallel Sessions (M16P1, M10P1, M14, M6P1, M5, C1)	Amphi, Markov, Petri, Turing, I50, I51
12:15-14:00	Lunch	
14:00-14:45	Plenary (P2 - Géraldine Pichot)	Amphi
14:45-15:30	Plenary (P3 - Axel Klawonn)	Amphi
15:30-16:00	Coffee Break	
16:00-18:10	Parallel Sessions (M16P2, M10P2, M13P1, M6P2, M8, C2)	Amphi, Markov, Petri, Turing, I50, I51
19:00-20:00	Welcoming cocktail	
	Tuesday, June 26	
8:30-9:15	Plenary (P4 - Marcus Sarkis)	Amphi
9:15-10:00	Plenary (P5 - Jin-Fa Lee)	Amphi
10:00-10:30	Coffee Break	
10:30-12:15	Parallel Sessions (M7P1, M15P1, M13P2, M9P1, M11P1, C6/C18)	Amphi, Markov, Petri, Turing, I50, I51
12:15-14:00	Lunch	
14:00-14:45	Plenary (P6 - Clemens Pechstein),	Amphi
14:45-15:35	Parallel Sessions (M7P2, C4, C19, C5, C20, C21)	Amphi, Markov, Petri, Turing, I50, I51
15:35-16:00	Coffee Break	
16:00-17:45	Parallel Sessions (M7P3, M15P2, M13P3, M9P2, M11P2, C7)	Amphi, Markov, Petri, Turing, I50, I51
18:00-22:00	Scientific Committee Meeting	
	Wednesday, June 27	
8:30-9:15	Plenary (P7 - Hyea Hyun Kim)	Amphi
9:15-10:00	Plenary (P8 - Beatrice Riviere)	Amphi
10:00-10:30	Coffee Break	
10:30-12:15	Parallel Sessions (M2P1, M15P3, M13P4, M9P3, C3, C8)	Amphi, Markov, Petri, Turing, I50, I51
12:15-14:00	Lunch	
14:00-14:45	Plenary (P9 - Xiao-Chuan Cai)	Amphi
14:45-15:30	Plenary (P10 - Eberhard Bänsch)	Amphi
15:30-16:00	Coffee Break	
16:00-17:45	Parallel Sessions (M2P2, M18P1, M20, M9P4, C9, C10)	Amphi, Markov, Petri, Turing, I50, I51
	Thursday, June 28	
8:30-9:15	Plenary (P11 - Blanca Ayuso de Dios)	Amphi
9:15-10:00	Plenary (P12 - Chen-Song Zhang)	Amphi
10:00-10:30	Coffee Break	
10:30-12:15	Parallel Sessions (M17P1, M18P2, M19P1, M3, C11/C18, C14)	Amphi, Markov, Petri, Turing, I50, I51
12:15-13:30	Lunch	
13:30-22:00	Excursion and dinner	
	Friday, June 29	
8:30-9:15	Plenary (P13 - Ralf Hiptmair)	Amphi
9:15-10:00	Plenary (P14 - Michael Holst)	Amphi
10:00-10:30	Coffee Break	
10:30-12:15	Parallel Sessions (M17P2, M1, M19P2, M4, M12, C12)	Amphi, Markov, Petri, Turing, I50, I51
12:15-14:00	Lunch	
14:00-15:45	Parallel Sessions (C15, C13, C16, C17)	Amphi, Markov, Petri, Turing
15:45-16:15	Closing	

Monday, June 25, 2012 – AM

Plenary Lectures P1

Location: Amphi **Chairman: Ralf Kornhuber**

9:15-10:00 : Laurence Halpern
Optimized Schwarz Waveform Relaxation and Applications to Semilinear Equations

Mini Symposium M16P1: Domain Decomposition with Mortars

Location: Amphi **Chairman: Yvon Maday and Caroline Japhet**

10:35-11:00 : Frédéric Hecht
Mortar Method to Solve Problem with Non-matching Grids in Freefem++
11:00-11:25 : Alfio Quarteroni
Discontinuous Approximation of Elastodynamics Equations
11:25-11:50 : Caroline Japhet
Mortar Methods with Optimized Transmission Conditions
11:50:12:15 : Zakaria Belhachmi
Spectral Element Discretization of Incompressible Flows in Axisymmetric Channels

Mini Symposium M10P1: New Developments of FETI, BDDC, and Related Domain Decomposition Methods

Location: Markov **Chairman: Xuemin Tu and Olof Widlund**

10:35-11:00 : Maksymilian Dryja
ASM for DG Discretization of Anisotropic Elliptic Problems
11:00-11:25 : Juan Galvis
Domain Decomposition Preconditioners for High-Contrast Multiscale Problems
11:25-11:50 : Hyea Hyun Kim
Two-Level Overlapping Schwarz Algorithms for a Staggered Discontinuous Galerkin Method
11:50-12:15 : Chang-Ock Lee
A Two-Level Nonoverlapping Schwarz Algorithm for the Stokes Problem

Mini Symposium M14 : 100% Parallelizable Algorithms for Symmetric, Indefinite and Non-Symmetric Problems

Location: Petri **Chairman: Ismael Herrera and Luis Miguel de la Cruz**

10:35-11:00 : Ismael Herrera
Four Massively Parallel Algorithms for Symmetric, Indefinite and Non-Symmetric Matrices: Overview
11:00-11:25 : Luis Miguel de la Cruz
Four Massively Parallel Algorithms for Symmetric, Indefinite and Non-Symmetric Matrices: Implementation Issues
11:25-11:50 : Alberto Rosas
Four Massively Parallel Algorithms for Symmetric, Indefinite and Non-Symmetric Matrices: Applications to a Single Equation
11:50-12:15 : Iván Contreras
Four Massively Parallel Algorithms for Static Elasticity

Mini Symposium M6P1: Heterogeneous Domain Decomposition Methods

Location: Turing **Chairman: Oliver Sander and Marco Discacciati**

10:35-11:00 : Heiko Berninger
Strategies for the Coupling of Ground and Surface Water
11:00-11:25 : Pablo Javier Blanco
Coupling Dimensionally-Heterogeneous Models in Hemodynamics Simulations
11:25-11:50 : Eva Casoni
Zonal Modeling Approach in Aerodynamic Simulation
11:50-12:15 : Paola Gervasio
Virtual Control Method for Heterogeneous Problems

Mini Symposium M5 : Exotic Coarse Spaces for Domain Decomposition Methods

Location: I50 **Chairman: Martin J. Gander, Laurence Halpern, Kévin Santugini**

10:35-11:00 : Martin J. Gander
A new Coarse Grid Correction for RAS

11:00-11:25 : Clark Dohrmann
Lower Dimension Coarse Spaces for Overlapping Schwarz Algorithms

11:25-11:50 : Jörg Willems
Spectral Coarse Space Construction in Robust Multilevel Methods

11:50-12:15 : Kévin Santugini
Discontinuous Coarse Space Corrections (DCS) for Optimized Schwarz Methods

Contributed Talks C1: Contact and Mechanics Problems

Location: I51 **Chairman: Christian Rey**

10:35-11:00 : Jaroslav Haslinger
A Domain Decomposition Algorithm for Contact Problems with Coulomb's Friction

11:00-11:25 : Brahim Nouiri
Multiplicative Schwarz Method for Nonlinear Quasi-Variational Inequalities and their Application in Contact Mechanics

11:25-11:50 : Ihor I. Prokopyshyn
Parallel Domain Decomposition Methods for Multibody Contact Problems of Nonlinear Elasticity

11:50:12:15 : Alexandros Markopoulos
Total FETI Method in Mechanics Problems

Monday, June 25, 2012 – PM

Plenary Lectures P2

Location: Amphi **Chairman: Ralf Kornhuber**

14:00-14:45 : Géraldine Pichot
On Robust Numerical Methods for Solving Flow in Stochastic Fracture Networks

Plenary Lectures P3

Location: Amphi **Chairman: Ralf Kornhuber**

14:45-15:30 : Axel Klawonn
Deflation, Projector Preconditioning and Robust Domain Decomposition Methods

Mini Symposium M16P2: Domain Decomposition with Mortars

Location: Amphi **Chairman: Yvon Maday and Caroline Japhet**

16:05-16:30 : Christian Waluga
Quasi-Optimal a priori Estimates for the Lagrange Multiplier in Mortar Type Couplings

16:30-16:55 : Yvon Maday
Some Recent Applications of Non Conforming Approximations

16:55-17:20 : François-Xavier Roux
FETI-2LM for Localizing the Mortars

17:20-17:45 : Oldřich Vlach
On Effective Implementation of the Non-penetration Condition for Non-matching Grids Preserving Scalability of FETI Based Algorithms

17:45-18:10 : Todd Arbogast
Multiscale Mortar Mixed Methods for Heterogeneous Elliptic Problems

Mini Symposium M10P2: New Developments of FETI, BDDC, and Related Domain Decomposition Methods

Location: Markov **Chairman: Xuemin Tu and Olof Widlund**

16:05-16:30 : Jungho Lee
Large-Scale Differential Variational Inequalities for Phase-Field Modeling

16:30-16:55 : Lourenco Beirão da Veiga
BDDC Preconditioners for Isogeometric Analysis

16:55-17:20 : Xuemin Tu
FETI-DP Domain Decomposition Methods for Incompressible Stokes Equation
17:20-17:45 : Olof Widlund
BDDC for some problems posed in $H(curl)$
17:45-18:10 : Jun Zou
An Overlapping Domain Decomposition Algorithm for Parameter Identifications

Mini Symposium M13P1: Robust Multilevel Methods for Multiscale Problems

Location: Petri Chairman: Thomas Dufaud, Johannes Kraus, Clemens Pechstein, Robert Scheichl, Jörg Willems

16:05-16:30 : Victorita Dolean
Analysis of Two-Level Method for Heterogeneous Darcy Equation based on Local Dirichlet to Neumann Maps
16:30-16:55 : Nicole Spillane
GenEO: A Coarse Space based on Generalized Eigenvalue Problems in the Overlaps
16:55-17:20 : Jinchao Xu
Single-Grid Multilevel Method
17:20-17:45 : Juan Galvis
Multiscale Spectral AMGe Solvers for High-Contrast Flow Problems
17:45-18:10 : Clark Dohrmann
Constraint and Weight Selection Algorithms for BDDC

Mini Symposium M6P2: Heterogeneous Domain Decomposition Methods

Location: Turing **Chairman: Oliver Sander and Marco Discacciati**

16:05-16:30 : Simona Perotto
Hierarchical Model Reduction: a Domain Decomposition Approach
16:30-16:55 : Franz Rammerstorfer
Mortar FEM/BEM Coupling for Poroelastodynamics
16:55-17:20 : Human Rezaijafari
A Stabilized Hybrid Discontinuous Galerkin Scheme for the Nonisothermal Coupling of Stokes and Darcy Flow
17:20-17:45 : Anton Schiela
Energy Minimizers of the Coupling of a Cosserat Rod to an Elastic Continuum

Mini Symposium M8 : Domain Decomposition Techniques in Practical Flow Applications

Location: I50 **Chairman: Menno Genseberger, Mart Borsboom, Martin J. Gander**

16:05-16:30 : Eric Blayo
Interface Conditions and Domain Decomposition Methods for Ocean-Atmosphere Coupling
16:30-16:55 : Bas van 't Hof
Water Level Predictions with WAQUA: Domain Decomposition on a Daily Basis
16:55-17:20 : Mart Borsboom
Analysis and Optimization of the Coupling Between Non-Overlapping Subdomains in 1D
17:20-17:45 : Fred Wubs
HYMLS: a Robust Parallel Preconditioner for Fluid Flow Computations

Contributed Talks C2: Contact and Mechanics Problems

Location: I51 **Chairman: Leonardo Baffico**

16:05-16:30 : Daniel Choi
A Posteriori Error Estimates and Domain Decomposition Algorithm for Contact Problems
16:30-16:55 : Vincent Visseq
Scalability Study of the NonSmooth Contact Domain Decomposition Method (NSCDD)
16:55-17:20 : Geoffrey Desmeure
A Mixed Domain Decomposition Method for Structural Assemblies with Interface Tractions Represented in $H^{1/2}$
17:20-17:45 : Julien Riton
A Robin Domain Decomposition Algorithm for Contact Problem with given Friction
17:45-18:10 : Philippe Karamian
A Numerical Implementation of Homogenization Technique to Evaluate the Effective Mechanical Properties of Reinforced Polymer Composites in the Frame of Domain Decomposition

Tuesday, June 26, 2012 – AM

Plenary Lectures P4

Location: Amphi **Chairman: Alfio Quarteroni**

8:30-9:15 : Marcus Sarkis
DDMs for DG Discretizations

Plenary Lectures P5

Location: Amphi **Chairman: Alfio Quarteroni**

9:15-10:00 : Jin-Fa Lee
An Expedition to Solving a Multiscale Electromagnetic Problem

Mini Symposium M7P1: Domain Decomposition, Preconditioning and Solvers in Isogeometric Analysis

Location: Amphi **Chairman: Lourenço Beirão da Veiga, Michel Bercovier, Simone Scacchi**

10:35-11:00 : Remi Abgrall
Isogeometric Analysis for Compressible Fluid Dynamics
11:00-11:25 : Michel Bercovier
Isogeometric Analysis and Schwarz Non-Matching Overlapping Domain Decomposition Methods
11:25-11:50 : Victor M. Calo
Solver Performance for Higher-Continuous Basis
11:50-12:15 : Krishan P. S. Gahalaut
Multigrid Solver for Isogeometric Discretization

Mini Symposium M15P1: Space-Time Parallel Methods

Location: Markov **Chairman: Martin J. Gander, Felix Kwok and Yvon Maday**

10:35-11:00 : Yvon Maday
Parareal in Time Algorithm for Hyperbolic Systems
11:00-11:25 : Michael Minion
Efficient Implementation of a Multi-Level Parallel in Time Algorithm
11:25-11:50 : Rim Guetat
Coupling Parareal Algorithm with Domain Decomposition Methods
11:50:12:15 : Felix Kwok
Neumann-Neumann Waveform Relaxation Methods for the Time-Dependent Heat Equation

Mini Symposium M13P2: Robust Multilevel Methods for Multiscale Problems

Location: Petri Chairman: Thomas Dufaud, Johannes Kraus, Clemens Pechstein, Robert Scheichl, Jörg Willems

10:35-11:00 : Petr Vanek
An Alternative to Domain Decomposition Methods based on Polynomial Smoothing
11:00-11:25 : Robert Scheichl
Energy Minimizing Coarse Space Construction
11:25-11:50 : James Brannick
Recent Advances in Algebraic Multigrid
11:50-12:15 : Marco Buck
Domain Decomposition Preconditioners for the Multiscale Analysis of Linear Elastic Composites

Mini Symposium M9P1: Fast Solvers for Helmholtz and Maxwell equations

Location: Turing **Chairman: Victorita Dolean, Ronan Perrussel, Hui Zhang, Peng Zhen**

10:35-11:00 : Lea Conen
An Overview of Multigrid and Domain Decomposition Methods for the Helmholtz Equation
11:00-11:25 : Hui Zhang
Optimized Schwarz Methods with Overlap for Helmholtz Equation
11:25-11:50 : Erwin Veneros
Optimized Schwarz Methods for Maxwell Equations with Discontinous Coefficients
11:50-12:15 : Bertrand Thierry
Improved Domain Decomposition Method for the Helmholtz Equation

Mini Symposium M11P1: Decomposition Strategies for Boltzmann's Equation

Location: I50 **Chairman: Heiko Berninger and Jérôme Michaud**

10:35-11:00 : Patrick Le Tallec
Half Fluxes Coupling of Boltzmann and Navier Stokes Equations
11:00-11:25 : Mohammed Lemou
On Micro-Macro Numerical Schemes for Multiscale Kinetic Equations
11:25-11:50 : Emmanuel Frénod
Two-Scale Convergence and Kinetic Equations
11:50-12:15 : Heiko Berninger
Neutrino Transport in Core Collapse Supernovae by Asymptotic Expansions of Boltzmann's Equation

Contributed Talks C6: Heterogeneous Problems and Coupling Methods

Location: I51 **Chairman: Rolf Krause**

10:35-11:00 : Marco Discacciati
Domain-Decomposition Preconditioners for the Darcy-Stokes Problem
11:00-11:25 : Marina Vidrascu
Matched Asymptotic Expansion and Domain Decomposition for an Elastic Structure
11:25-11:50 : Christian Engwer
Heterogeneous Coupling for Implicitly Described Domains

Contributed Talks C18: FETI Methods

Location: I51 **Chairman: Rolf Krause**

11:50:12:15 : K. C. Park
A Simple Explicit-Implicit FETI Transient Analysis Algorithm

Tuesday, June 26, 2012 – PM

Plenary Lectures P6

Location: Amphi **Chairman: David Keyes**

14:00-14:45 : Clemens Pechstein
Substructuring for Multiscale Problems

Mini Symposium M7P2: Domain Decomposition, Preconditioning and Solvers in Isogeometric Analysis

Location: Amphi **Chairman: Lourenço Beirão da Veiga, Michel Bercovier, Simone Scacchi**

14:45-15:10 : Christian Hesch
Mortar Based Domain Decomposition for Isogeometric Analysis
15:10-15h35 : Stefan Kleiss
IETI - Isogeometric Tearing and Interconnecting

Contributed Talks C4: Domain Decomposition for Helmholtz Equation

Location: Markov **Chairman: Ana Alonso Rodriguez**

14:45-15:10 : Chris Stolk
Domain Decomposition for Helmholtz Equations with PML Boundary Conditions
15:10-15:35 : Dalibor Lukáš
BEM–based Domain Decomposition Methods

Contributed Talks C19: Multiprocessors Applications

Location: Petri **Chairman: Eric Darrigrand**

14:45-15:10 : Hatem Ltaief
Data-Driven Fast Multipole Method on Distributed Memory Systems with Hardware Accelerators
15:10-15:35 : Menno Genseberger
Improved Parallel Performance on Supercomputers by Domain Decomposition in Jacobi-Davidson for Large Scale Eigenvalue Problems

Contributed Talks C5: Heterogeneous Problems and Coupling Methods

Location: Turing **Chairman: Eric Blayo**

14:45-15:10 : Jonathan Youett
A Time Discretization for a Heterogeneous Knee Model involving Contact Problems

15:10-15:35 : Manel Tayachi
Design of a Schwarz Coupling Method for a Dimensionally Heterogeneous Problem

Contributed Talks C20: Adaptive Meshing Paradigm

Location: I50 **Chairman: Stéphane Lanteri**

14:45-15:10 : Shuo Zhang
Norms of Trace Functions on Unstructured Grid

15:10-15:35 : Cédric Lachat
PaMPA: Parallel Mesh Partitioning and Adaptation

Contributed Talks C21: FETI Methods

Location: I51 **Chairman: Alexandros Markopoulos**

14:45-15:10 : Marta Jarošová
Hybrid Total FETI

15:10-15:35 : Michal Merta
Massively Parallel Implementation of Total-FETI DDM with Applications to Medical Image Registration

Mini Symposium M7P3: Domain Decomposition, Preconditioning and Solvers in Isogeometric Analysis

Location: Amphi **Chairman: Lourenço Beirão da Veiga, Michel Bercovier, Simone Scacchi**

16:05-16:30 : Angela Kunoth
Multilevel Preconditioning for Isogeometric Analysis

16:30-16:55 : Luca F. Pavarino
Overlapping Schwarz Methods for Isogeometric Analysis

16:55-17:20 : Satyendra Tomar
Algebraic Multilevel Iteration Method for Isogeometric Discretization of Elliptic Problems

17:20-17:45 : Rafael Vazquez
Multilevel Preconditioning for Isogeometric Analysis Based on Hierarchical Splines

Mini Symposium M15P2: Space-Time Parallel Methods

Location: Markov **Chairman: Martin J. Gander, Felix Kwok and Yvon Maday**

16:05-16:30 : Stefan Güttel
On the Convergence of Parallel Deferred Correction Methods

16:30-16:55 : Martin J. Gander
Analysis of the Parareal Algorithm and a Symmetrized Variant for Hamiltonian Problems

16:55-17:20 : Jacques Laskar
Time-Parallel Integrations for Long Term Solar System Studies

17:20-17:45 : Julien Salomon
Time-Parallelization and Optimal Control for NMR

Mini Symposium M13P3: Robust Multilevel Methods for Multiscale Problems

Location: Petri Chairman: Thomas Dufaud, Johannes Kraus, Clemens Pechstein, Robert Scheichl, Jörg Willems

16:05-16:30 : Florian Thomines
A Systematic Coarse-Scale Model Reduction Technique for Parameter-Dependent Flows in Highly Heterogeneous Media

16:30-16:55 : Ivan Graham
Multiscale Finite Elements for High-Contrast Elliptic Problems

16:55-17:20 : Jan Nordbotten
Approximate Multilevel Solvers for Flow and Transport in Porous Media

17:20-17:45 : Xiaozhe Hu
Parallel AMG Method on GPU

Mini Symposium M9P2: Fast Solvers for Helmholtz and Maxwell equations

Location: Turing **Chairman: Victorita Dolean, Ronan Perrussel, Hui Zhang, Peng Zhen**

16:05-16:30 : Olaf Steinbach
Coupled Finite and Boundary Element Methods for Vibro-Acoustic Interface Problems

16:30-16:55 : Jin-Fa Lee
Integral Equation Domain Decomposition Method for Solving Electromagnetic Wave Scattering from Deep Cavities

16:55-17:20 : Eric Darrigrand
OSRC Preconditioner and Fast Multipole Method for 3D Helmholtz Equation: a Spectral Analysis

17:20-17:45 : Yogi Erlangga
Shift-Operator-Based Domain Decomposition Method for the Helmholtz Equation

Mini Symposium M11P2: Decomposition Strategies for Boltzmann's Equation

Location: I50 **Chairman: Heiko Berninger and Jérôme Michaud**

16:05-16:30 : François Golse
A Coupling Method for Transport/Diffusion Problems

16:30-16:55 : Giacomo Dimarco
Fluid Simulations with Localized Boltzmann Upscaling by Direct Monte Carlo

16:55-17:20 : Sudarshan Tiwari
Simulation of the Boltzmann and the Navier-Stokes Equations with Particle Methods based on Domain Decomposition for Steady and Unsteady Flows

17:20-17:45 : Jérôme Michaud
The IDSA and Boltzmann's Equation: Discretization, Comparison and Modeling Error

Contributed Talks C7: Domain Decomposition with Preconditionners

Location: I51 **Chairman: Damien Tromeur-Dervout**

16:05-16:30 : Daniel Szyld
Additive Schwarz with variable weights is better

16:30-16:55 : Feng-Nan Hwang
Parallel Multilevel Polynomial Jacobi-Davidson Eigensolver for Dissipative Acoustic Problems

16:55-17:20 : Santiago Badia
On the Scalability of Balanced Domain Decomposition Preconditioners for Large Scale Computing: Galerkin-based and Efficient Coarse Corrections

17:20-17:45 : Laurent Berenguer
Low-Rank Update of the Restricted Additive Schwarz Preconditioner for Nonlinear Systems

Wednesday, June 27, 2012 – AM

Plenary Lectures P7

Location: Amphi **Chairman: Laurence Halpern**

8:30-9:15 : Hyea Hyun Kim
Recent Advances in Domain Decomposition Methods for the Stokes Problem

Plenary Lectures P8

Location: Amphi **Chairman: Laurence Halpern**

9:15-10:00 : Beatrice Riviere
Discontinuous Galerkin Methods for Multiphysics Problems

Mini Symposium M2P1: Domain Decomposition for Porous Media Flow and Transport

Location: Amphi **Chairman: Caroline Japhet and Michel Kern**

10:35-11:00 : Oliver Sander
Discretizations for the Richards Equation Based on Kirchhoff Transformation

11:00-11:25 : Thi Thao Phuong Hoang
Space-Time Domain Decomposition For Mixed Formulations of Transport Problems In Porous Media

11:25-11:50 : Frédéric Nataf
Algebraic Domain Decomposition Methods for Highly Heterogeneous Problems

11:50-12:15 : Zhangxin Chen
GPU-based Parallel Reservoir Simulators

Mini Symposium M15P3: Space-Time Parallel Methods

Location: Markov **Chairman: Martin J. Gander, Felix Kwok and Yvon Maday**

10:35-11:00 : Bankim Chandra Mandal
Dirichlet-Neumann Waveform Relaxation for the Time Dependent Heat Equation
11:00-11:25 : Mohamed Kamel Riahi
Parareal in Time Intermediate Targets Methods for Optimal Control Problem
11:25-11:50 : Ron Haynes
A RIDC-DD Space-Time Algorithm for Time Dependent Partial Differential Equations
11:50:12:15 : Olga Mula Hernandez
Parareal for Neutronic Core Calculations

Mini Symposium M13P4: Robust Multilevel Methods for Multiscale Problems

Location: Petri Chairman: Thomas Dufaud, Johannes Kraus, Clemens Pechstein, Robert Scheichl, Jörg Willems

10:35-11:00 : Baptiste Poirriez
Deflation and Neumann-Neumann Preconditioner for Schur Domain Decomposition Method
11:00-11:25 : Thomas Dufaud
An Algebraic Multilevel Preconditioning Framework based on Information of a Richardson Process
11:25-11:50 : Svetozar Margenov
Multilevel Preconditioning of Strongly Anisotropic Elliptic Problems
11:50-12:15 : Johannes Kraus
Robust Domain Decomposition Multigrid Methods using Additive Schur Complement Approximation

Mini Symposium M9P3: Fast Solvers for Helmholtz and Maxwell equations

Location: Turing **Chairman: Victorita Dolean, Ronan Perrussel, Hui Zhang, Peng Zhen**

10:35-11:00 : Rosalie Belanger-Rioux
A Fast and Accurate Absorbing Boundary Condition for the Helmholtz Equation
11:00-11:25 : Achim Schadle
Curl-Conforming Hardy Space Infinite Elements for Exterior Maxwell Problems
11:25-11:50 : Ana Alonso Rodriguez
Finite Element Construction of Discrete Harmonic Fields
11:50-12:15 : Martin Huber
Hybrid Domain Decomposition Solvers for the Helmholtz Equation

Contributed Talks C3: Optimized Schwarz Methods

Location: I50 **Chairman: Kévin Santugini**

10:35-11:00 : Florence Hubert
Optimized Schwarz Algorithms for Finite Volume Schemes
11:00-11:25 : Lahcen Laayouni
On the Algebraic Optimized Schwarz methods (AOSM): Performances and Applications
11:25-11:50 : Erell Jamelot
Domain Decomposition for the Neutron SP_N Equations
11:50:12:15 : Frédéric Magoulès
A Stochastic-based Optimized Schwarz Method for the Gravimetry Equations on GPU Clusters

Contributed Talks C8: Application to Flow Problems

Location: I51 **Chairman: Taoufik Sassi**

10:35-11:00 : Aivars Zemitis
On Domain Decomposition Based Software Tool for Flow Simulation in Containment Pools of Nuclear Reactors
11:00-11:25 : Leonardo Baffico
A Fluid Structure Interaction Problem with Friction–Type Slip Boundary Condition
11:25-11:50 : François Pacull
Krylov Acceleration of Schur Complement Type Iterations for Linearized CFD Systems: a Numerical Examination
11:50:12:15 : Daniel Loghin
Interface Preconditioners for Flow Problems

Wednesday, June 27, 2012 – PM

Plenary Lectures P9

Location: Amphi **Chairman: Petter Bjørstad**

14:00-14:45 : Xiao-Chuan Cai
Monolithic Schwarz Algorithms for Simulation and Optimization of Blood Flows

Plenary Lectures P10

Location: Amphi **Chairman: Petter Bjørstad**

14:45-15:30 : Eberhard Bänsch
A Finite Element Method for Particulate Flow

Mini Symposium M2P2: Domain Decomposition for Porous Media Flow and Transport

Location: Amphi **Chairman: Caroline Japhet and Michel Kern**

16:05-16:30 : Bernd Flemisch
Model Coupling for Multiphase Flow in Porous Media
16:30-16:55 : Paul-Marie Berthe
Space-Time Domain Decomposition with Finite volumes for Porous Media Applications
16:55-17:20 : Jean-Baptiste Apoung Kamga
A Numerical Zoom Preconditioner for Discontinuous Galerkin Domain Decomposition Approximation of Darcy Flow
17:20-17:45 : Anthony Michel
Time Space Domain Decomposition for Reactive Transport in Porous Media. Application to CO2 Geological Storage

Mini Symposium M18P1: Solvers for Discontinuous Galerkin Methods

Location: Markov **Chairman: Blanca Ayuso de Dios, Susanne C. Brenner**

16:05-16:30 : Alexandre Pieri
BDDC Preconditioners: from hp-Continuous to Discontinuous Galerkin Schemes with Different Local Polynomial Degrees
16:30-16:55 : Kolja Brix
Robust Preconditioners for DG-Discretizations with Arbitrary Polynomial Degrees on Locally Refined Meshes
16:55-17:20 : Christoph Lehrenfeld
DD Preconditioning for High Order Hybrid DG Methods on Tetrahedral Meshes
17:20-17:45 : Eun-Hee Park
A BDDC Method for a Symmetric Interior Penalty Galerkin Method

Mini Symposium M20 : Domain Decomposition and Multiscale Methods

Location: Petri **Chairman: Petter E. Bjørstad**

16:05-16:30 : Talal Rahman
Alternative Coarse Spaces for Additive Schwarz Methods for Multiscale Elliptic Problems
16:30-16:55 : Juan Galvis
Domain Decomposition and Multiscale Methods for High-contrast Elliptic Equations
16:55-17:20 : Robert Scheichl
Weak Approximation Properties of Elliptic Projections with Functional Constraints
17:20-17:45 : Rui Du
Two-Level Additive Schwarz Methods with Adaptive Sampling Coarse Spaces for Multiscale Problems in High Contrast Media

Mini Symposium M9P4: Fast Solvers for Helmholtz and Maxwell equations

Location: Turing **Chairman: Victorita Dolean, Ronan Perrussel, Hui Zhang, Peng Zhen**

16:05-16:30 : Ronan Perrussel
Schwarz Methods for Time-Harmonic Maxwell's Equations Discretized by a Hybridized Discontinuous Galerkin Method
16:30-16:55 : Jack Poulson
A Parallel Sweeping Preconditioner for High-Frequency Heterogeneous 3d Helmholtz Equations

16:55-17:20 : Zhen Peng
Speed up Non-conformal DDM Convergence using an Asymmetric Optimal Transmission Condition
17:20-17:45 : Stéphane Lanteri
Discretization of Optimized Schwarz Methods for Maxwell's Equations

Contributed Talks C9: Multidomains and Time Domain Decomposition

Location: I50 **Chairman: Xiao-Chuan Cai**

16:05-16:30 : Chao Yang
Parallel Implicit Method for Phase-Field Problems
16:30-16:55 : Felix Kwok
Analysis of a Predictor-Corrector Method with Many Subdomains
16:55-17:20 : Martin Cermak
Total-FETI Domain Decomposition Method for Solving Elasto-Plastic Problem with Contact
17:20-17:45 : Damien Tromeur-Dervout
Non Linear Boundary Conditions for Time Domain Decomposition Method

Contributed Talks C10: Application to Flow Problems

Location: I51 **Chairman: Frédéric Magoulès**

16:05-16:30 : Jyri Leskinen
Distributed Shape Optimization Using the Coupling of DDM of Nonlinear Flows and GDM of Shapes on a Hybrid CPU/GPU Platform
16:30-16:55 : Mohamed Khaled Gdoura
Domain Decomposition for Stokes Problem with Tresca Friction: Augmented Lagrangian Approach
16:55-17:20 : Thu Huyen Dao
A Schur Complement Method for Two-Phase Flow Models
17:20-17:45 : Guillaume Houzeaux
Schur or not Schur: not so sure

Thursday, June 28, 2012 – AM

Plenary Lectures P11

Location: Amphi **Chairman: Olof Widlund**

8:30-9:15 : Blanca Ayuso de Dios
Solvers for Discontinuous Galerkin Methods

Plenary Lectures P12

Location: Amphi **Chairman: Olof Widlund**

9:15-10:00 : Chen-Song Zhang
Fast Auxiliary Space Preconditioning: Implementation and Applications in Complex Flows

Mini Symposium M17P1: 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 : Sébastien Loisel
Large-Scale Implementation of Optimized Decomposition Methods
11:00-11:25 : Florence Hubert
Optimized Schwarz Algorithms for Anisotropic Elliptic Operators in the Framework of DDFV Schemes
11:25-11:50 : Oliver Sander
The 2-Lagrange-Multiplier Method for the Richards Equation
11:50:12:15 : Minh Binh Tran
Optimized Schwarz Methods for the Primitive Equations

Mini Symposium M18P2: Solvers for Discontinuous Galerkin Methods

Location: Markov **Chairman: Blanca Ayuso de Dios, Susanne C. Brenner**

10:35-11:00 : Paola F. Antonietti
Schwarz Methods for a Preconditioned WOPSIP Discretization of Elliptic Problems

11:00-11:25 : Andrew Barker
Additive Schwarz Preconditioners for the Discontinuous Petrov-Galerkin Method
11:25-11:50 : Guido Kanschat
Multigrid Methods for a Divergence–Conforming DG Discretization of Incompressible Flow
11:50:12:15 : Ludmil T. Zikatanov
A Preconditioner for $H(\mathrm{div})$-Conforming DG Discretizations of Stokes Equation

Mini Symposium M19P1: Domain Decomposition in Computational Cardiology

Location: Petri **Chairman: Rolf Krause and Luca Pavarino**

10:35-11:00 : Luca Gerardo-Giorda
Optimized Schwarz Coupling and Model Adaptivity for Numerical Elctrocardiology
11:00-11:25 : Dorian Krause
Scalable Solvers for Electrocardiology on Massively Parallel Architectures
11:25-11:50 : Stefano Zampini
Exact and Inexact BDDC Methods for the Cardiac Bidomain Model
11:50-12:15 : Charles Pierre
A Preconditioner with Almost Linear Complexity for the Bidomain Model

Mini Symposium M3 : Finite Elements for First-Order System Formulations of Interface Problems

Location: Turing **Chairman: Pavel Bochev and Gerhard Starke**

10:35-11:00 : James Adler
Constrained First-Order System Least Squares for Improved Mass Conservation
11:00-11:25 : Pavel Bochev
Least-Squares Methods for Mesh-Tying
11:25-11:50 : Fleurianne Bertrand
Least Squares Methods with Interface Approximation for Two Phase Stokes Flow
11:50-12:15 : Steffen Münzenmaier
Least Squares Finite Element Methods for Coupled Generalized Newtonian Stokes-Darcy Flow

Contributed Talks C11: Time Parallel - Parareal Methods

Location: I50 **Chairman: Michael Minion**

10:35-11:00 : Noha Makhoul-Karam
Ratio-Based Parallel Time Integration
11:00-11:25 : Daniel Ruprecht
Hybrid Space-Time Parallel Solution of Burger's Equation
11:25-11:50 : Rolf Krause
A Massively Space-Time Parallel N-Body Solver

Contributed Talks 18: FETI Methods

Location: I50 **Chairman: Michael Minion**

11:50-12:15 : Ulrich Langer
FETI-Solvers for Non-standard Finite Element Equations based on Boundary Integral Operators

Contributed Talks C14: Time Dependent PDEs and Applications

Location: I51 **Chairman: Daniel Loghin**

10:35-11:00 : Petros Aristidou
A Schur Complement Method for DAE Systems in Power System Simulation
11:00-11:25 : Rodrigue Kammogne
Domain Decomposition Methods for Reaction-Diffusion Systems
11:25-11:50 : Frederic Plumier
Combining Full Transients and Phasor Approximation Models in Power System Time Simulation
11:50-12:15 : David Cherel
Domain Decomposition For Stokes Equations Using Waveform Relaxation Method

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 : Martin Weiser
Delayed Residual Compensation for Bidomain Equations
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 : Maxime Sermesant
Interactive Electromechanical Model of the Heart for Patient-Specific Simulation

Mini Symposium M4 : On the Origins of Domain Decomposition Methods

Location: I50 **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 : Debasish Pradhan
A Robin-Type Non-Overlapping Domain Decomposition Procedure for Second Order Parabolic Problems
15:20-15:45 : Frédéric Magoulès
A Bacteria Evolution-based Partitioning Scheme for the Parallel Solution of Problems in Computational Mechanics

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

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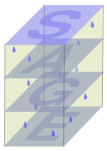


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