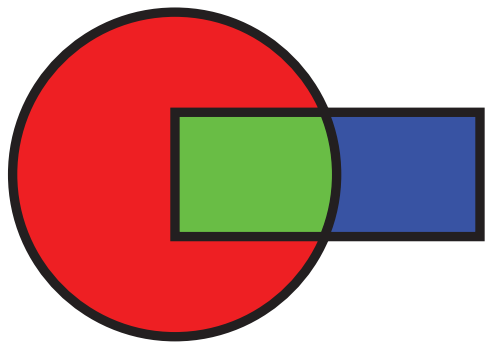


HALL 1 (B286)				notes:	
8:00	Opening of the conference Zdeněk Dostál, Laurence Halpern Plenary lectures / Chairperson: Susanne Brenner	8:30 Barbara Wohlmuth Multi-physics models with mixed dimensions: Bio-medical and seismic applications	9:15 Silvia Bertoluzza Domain decomposition for the Virtual Element Method	All times are in Central European Summer Time (CEST) Light brown color means hybrid session	
10:00 Coffee break					
HALL 2 (C215)	HALL 3 (C217)	HALL 4 (C219)	HALL 5 (C221)	HALL 6 (C223)	
MS6: Domain Decomposition for Multi-Physics Problems Chairperson: Christian Vergara	MS3: On Domain Decomposition Methods and Preconditioners for PDE-Constrained Optimization Problems Chairperson: Gabriele Ciarrella	MS5: Advances and Developments of Domain Decomposition Methods for Circuit Simulations Chairperson: Pratik Mahadeo Kumbhar	MS13: Non-Overlapping Domain Decomposition Methods Chairperson: Bastien Chaudet-Dumas	Contributed lectures Chairperson: Zdeněk Dostál	
10:30 Martin Gander An Introduction to Heterogeneous Domain Decomposition Methods for Multi-Physics Problems	Guenter Leugering Nonoverlapping domain decomposition of optimal control problems with p-structure on metric graphs	Hélène Shourick Accelerated convergence of the pipelined dynamic iteration method for heterogeneous EMT-TS co-simulation of RLC circuits	Tommaso Bevilacqua BDDC preconditioners for divergence free virtual element discretizations of the Stokes equations	Per-Gunnar Martinsson Direct solvers for high order discretizations of wave scattering problems	
11:00 Giuseppe A. Zampogna A domain decomposition based implementation of multiscale membrane flows	Laurence Halpern Robin Schwarz waveform relaxation methods for optimal control problems	Idaia Cortes Garcia Learning of Differential Algebraic Equations for Electric Networks	Marie-Claude Canon-Vialon Methods in a geometrical multi-scale domain with continuous or discontinuous junctions	Jongho Park Domain decomposition methods for finite element methods with strain smoothing	
11:30 José Daniel Galaz Mora Coupling Dispersive Shallow Water Models by Deriving Asymptotic Interface Operators	Felix Kwok Nonlinear optimized Schwarz preconditioning for optimal control problems	Simon Clement Discrete analysis of Schwarz Waveform Relaxation for a simplified air-sea coupling problem with nonlinear transmission conditions	Liu-Di Lu Dirichlet-Neumann and Neumann-Neumann Methods for Parabolic Control Problems	Matthieu Lecouvez Right-hand sides compression for iterative methods: application to a domain decomposition method for harmonic Maxwell's equations	
12:00			Hardik Kothari Domain Decomposition and Multigrid Preconditioners for Unfitted Finite Element Methods	Thomas Wick Matrix-free Monolithic Multigrid Methods for Stokes and Generalized Stokes Problems	
12:30 Lunch break					
HALL 1 (B286)		MONDAY, July 25			
14:00	Plenary lecture / Chairperson: David Keyes	Stefano Zampini Device Accelerated solvers with PETS: current status, future perspectives, and applications	swapped		
HALL 2 (C215)	HALL 3 (C217)	HALL 4 (C219)	HALL 5 (C221)	HALL 6 (C223)	
MS6: Domain Decomposition for Multi-Physics Problems Chairperson: Christian Vergara	MS3: On Domain Decomposition Methods and Preconditioners for PDE-Constrained Optimization Problems Chairperson: Felix Kwok	MS1: Efficient Solvers for Maxwell Equations Chairperson: Thomas Wick	MS13: Non-Overlapping Domain Decomposition Methods Chairperson: Liu-Di Lu	Contributed lectures Chairperson: Luca Pavarino	
15:00 Tommaso Vanzan Weak scalability of domain decomposition methods for discrete fracture networks	Norbert Tognon Analysis of Paraopt algorithm	Martin Gander Maxwell's Equations and Domain Decomposition: an Introduction	Bastien Chaudet-Dumas A geometrically convergent variant of the Dirichlet-Neumann method in the presence of cross-points	Sahar Borzooei A domain decomposition method with PML transmission conditions for Maxwell's equation	
15:30 Conor McCoid Robust intersection algorithms for non-matching grids	Julien Salomon Operator analysis of the ParaOpt algorithm	Sebastian Kinnewig Combination of Domain Decomposition Methods and Adaptive Grid Refinement Applied to Time-Harmonic Maxwell's Equations	Stephan Lunowa Non-overlapping Schwarz Waveform-Relaxation for Nonlinear Advection-Diffusion Equations	Pascal Omnes Optimized Schwarz Waveform Relaxation method for the incompressible Stokes problem	
16:00 Miroslav Kuchta Parameter robust monolithic solvers for coupled Biot/Darcy-Stokes models	Alexandre Vieira A domain decomposition approach for a Topology Optimisation problem	Michael Leumüller A Robin Type Domain Decomposition Preconditioner for the Vector Valued Wave Equation	Clemens Pechstein Non-overlapping Robin-Schwarz methods - continuous and discrete with special focus on cross points	Abdeladim El Akri Auxiliary Space Preconditioning for the $H(\text{curl}, \Omega)$ and $H(\text{div}, \Omega)$ B-Splines finite elements	
16:30 Marco Discacciati (Online) Optimized Schwarz methods for the Stokes-Darcy problem	Tommaso Vanzan Preconditioners for optimal control problems under uncertainty	Maryam Parvizi H-matrix approximability of inverses of FEM matrices for the time-harmonic Maxwell equations	Yiyang Wang Optimized Schwarz Methods for the Brinkman Equations with discontinuous coefficients	Leszek Marcinkowski Adaptive Schwarz method for a non-conforming Crouton-Raviart discretization of a multiscale elliptic problem	
17:00 Coffee break					
MS6: Domain Decomposition for Multi-Physics Problems Chairperson: Christian Vergara	MS3: On Domain Decomposition Methods and Preconditioners for PDE-Constrained Optimization Problems Chairperson: Gabriele Ciarrella, Felix Kwok	MS14: Scalability, Coarse Spaces and Cross Points Chairperson: Laurence Halpern	MS1: Efficient Solvers for Maxwell Equations Chairperson: Sven Beuchler	Contributed lectures Chairperson: Hyea Hyun Kim	
17:30 Simone Deparis Coupling of non-conforming subdomains by Internodes: Definition and conservation properties	Liudi Lu Dirichlet-Neumann and Neumann-Neumann Methods for Elliptic Control Problems	Serge Van Crielingen Spectral Q_1-based Coarse Spaces for Schwarz Methods	Victorita Dolean Two-level DDM preconditioners for Low Frequency Maxwell equations	Eric C. Cyr A Two-Level Scheme for Training Partition of Unity Networks	
18:00 Thomas Wick A non-intrusive adaptive global-local approach for phase-field fracture problems	Andreas Schafelner Adaptive space-time finite element methods for parabolic optimal control problems	Clark Dohrmann (Online) Scalable Multilevel Overlapping Schwarz Algorithms and Applications	Bogdan Radu A second order finite element method with mass lumping for Maxwell's equations on tetrahedra	Francisco Bernal Strongly scalable algorithms based on probabilistic domain decomposition	
18:30 Luca Dedé (Online) A segregated scheme for cardiac electro-mechano-fluid interaction modeling	Martin Dostál Dual Domain Decomposition Methods for Modular-topology Optimization Problems	Bastien Chaudet-Dumas Cross-points in the Neumann-Neumann method	Mario Gabriel Space-Time Finite Elements in Moving Domains	Damien Tromeur-Dervout Time domain decomposition with Koopman operator and dynamic modes decomposition	
19:00	Zhiyu Tan (Online) Convergence analysis of the Schwarz alternating method for unconstrained elliptic optimal control problems		Carolina Urzúa-Torres Cancelled Galdéron: Preconditioner for the EIE on Multi-screens		

HALL 1 (B286)				notes:	
8:30	Plenary lectures / Chairperson: Xiao-Chuan Cai	Hyea Hyun Kim Domain decomposition algorithms for neural network approximation of partial differential equations	9:15 Jonathan Siegel Approximation Properties of Neural Networks and Applications to Numerical PDEs		
10:00 Coffee break					
HALL 2 (C215)	HALL 3 (C217)	HALL 4 (C219)	HALL 5 (C221)	HALL 6 (C223)	
MS9: Learning Algorithms, Domain Decomposition Methods, and Applications Chairperson: Xiao-Chuan Cai	MS5: Advances and Developments of Domain Decomposition Methods for Circuit Simulations Chairperson: Martin Gander	Contributed lectures Chairperson: Zdeněk Dostál	MS8: Algebraic Domain Decomposition Methods Chairperson: Lahcen Laayouni	MS11: Domain Decomposition Preconditioners and Solvers for Isogeometric Analysis and Virtual Element Methods Chairperson: Luca Pavarino	
10:30 Axel Klawonn Learning the Constraints in Adaptive FETI-DP Methods	Fei Wei (Online) A Non-iterative Overlapping Schwarz Waveform Relaxation Algorithm for Wave Equation	Andreas Seibold Interface-modes of the FETI interface problem in multirate time-integration	Lahcen Laayouni Historical overview of algebraic domain decomposition methods	Olof Widlund Adaptive overlapping Schwarz algorithms for linear elasticity	
11:00 Matteo Caldana Accelerating Algebraic Multigrid Methods via Artificial Neural Networks	Mohammad Al-Khaleel (Online) Discrete Optimized Waveform Relaxation Methods for Circuit Simulations	Luca Gerardo-Giorda From Optimized to Optimal Schwarz Methods	Hussam Al Daas Robust algebraic domain decomposition preconditioners	Jarle Sogn IETI-DP methods for the Stokes problem	
11:30 Alexander Heinelein Surrogate Models for Computational Fluid Dynamics Simulations Using Convolutional Autoencoder Neural Networks and Physical Constraints	Pratik Mahadeo Kumbhar Optimized Schwarz Waveform Relaxation Methods for the Telegrapher Equation	Alexandros Kyriakis (Online) Parallel Schwarz algorithms for time-harmonic wave propagation problems	Michal Outrata Algebraic bounds for MRAS	Stefan Takacs Isogeometric Tearing and Interconnecting Methods for elasticity problems	
12:00 Li Luo (Online) A learning-based nonlinear preconditioning technique for partial differential equations		Pilghwa Lee (Online) Bio model with generalized eigenvalue problems for scalability and robustness to parameters	Daniel Szyld Provable convergence rate for asynchronous Schwarz	Michal Bosy A domain decomposition method for isogeometric multi-patch problems with inexact local solvers	
12:30 Lunch break					
HALL 1 (B286)		TUESDAY, July 26			
14:00	Plenary lecture / Chairperson: Olof Widlund	Xiao-Chuan Cai Schwarz for complex fluid and solid problems in biomechanics			
HALL 2 (C215)	HALL 3 (C217)	HALL 4 (C219)	HALL 5 (C221)	HALL 6 (C223)	
MS9: Learning Algorithms, Domain Decomposition Methods, and Applications Chairperson: Alexander Heinelein	MS14: Scalability, Coarse Spaces and Cross Points Chairperson: Martin J. Gander	MS10: Parallel-in-Time Methods: Recent Developments and Applications Chairperson: Iryna Kulchytska-Ruchka	Contributed lectures Chairperson: Jakub Šístek	MS11: Domain Decomposition Preconditioners and Solvers for Isogeometric Analysis and Virtual Element Methods Chairperson: Stefan Takacs	
15:00 Enrico Manuzzi Machine Learning based refinement strategies for polytopal grids with applications to Virtual Element and Discontinuous Galerkin methods	Gabriele Ciarrella Scalability analysis of the parallel Schwarz method for growing chains of fixed-sized subdomains	Rishabh Bhatt Introducing time parallelisation within data assimilation using parareal	Clemens Hofreither Rational Krylov Methods for Elliptic and Parabolic Fractional Diffusion Problems	Stefan Työler Adaptivity with isogeometric patches	
15:30 Chang-Ock Lee Two-Level Group Convolution	Miranda Bouillier A Trefftz-like coarse space for the two-level Schwarz method on perforated domains	Gobinda Garai (Online) Parareal Algorithm for the Cahn-Hilliard Equation	Stephan Köhler Globalization of Nonlinear FETI-DP Methods	Adam Wasiak Adaptive and Frugal FETI-DP for Virtual Elements	
16:00 Marek Pecha Multi-GPU Approaches into Distributed Machine Learning for Natural Hazard Applications	Laurence Halpern Application of Nonharmonic Fourier Analysis to Schwarz methods	Duc Quang Bui Domain Decomposition Method in Time Direction for Transport Control	Qais Al Faraei L[∞]-Finite element convergence of linear Schwarz alternating iterations for Semi-linear elliptic PDEs	Juan Calvo A virtual coarse space for problems posed in $H(\text{curl})$ with irregular subdomains	
16:30 Eric Chung (Online) Learning of computational model using local-global multiscale methods		Jens Hahne Task graph-based performance analysis of PinT methods	Gabriele Ciarrella On space-time RAS methods for wave-type equation	Martina Busetto Geometric multigrid schemes for the Virtual Element Method on agglomerated polygonal grids	
17:00 Coffee break					
MS9: Learning Algorithms, Domain Decomposition Methods, and Applications Chairperson: Axel Klawonn	MS2: New Developments in Substructuring Domain Decomposition Methods Chairperson: Tommaso Vanzan	Contributed lectures Chairperson: Tomáš Kozubek	MS8: Algebraic Domain Decomposition Methods Chairperson: Lahcen Laayouni	MS11: Domain Decomposition Preconditioners and Solvers for Isogeometric Analysis and Virtual Element Methods Chairperson: Olof Widlund	
17:30 Rolf Krause Multilevel Training of Deep Residual Networks	Martin Gander An Introduction to Substructuring in Domain Decomposition	Petr Beremlijski Parallel solution of 3D contact shape optimization problems with Coulomb friction based on TFETI	Konstantin Brenner (Block-)Jacobi-Newton method for mildly nonlinear systems	Thomas Takacs Multigrid solvers for the biharmonic problem over isogeometric multi-patch domains	
18:00 Hyea Hyun Kim Numerical Experience with Domain Decomposition Algorithms for Neural Network Approximate Solutions	Gabriele Ciarrella One- and two-level methods of reflections	Eun-Hee Park FETI-DP Preconditioners for the Brinkman Problem	Seyed Saberi A restricted additive smoother for the Stokes equations	Melina Merkel Simulation of Rotation in Electric Motors using Isogeometric Mortaring	
18:30 Victorita Dolean Domain decomposition training strategies for physics-informed neural networks	Silvia Bertoluzza A new fully p robust non overlapping DD preconditioner	Nicolas Marsic Transmission operators for the non-overlapping Schwarz method for solving Helmholtz problems in cavities	Abdessadek Rifqi Optimized Schwarz Methods For Isogeometric Analysis	Rainer Schneckenleitner IETI-DP methods for discontinuous Galerkin multi-patch Isogeometric Analysis with T-junctions	
19:00 Abhijit Sarkar (Online) Multilevel scalable solvers for sparse Bayesian learning of geospatial spread of COVID-19	Christian Glusa (Online) Domain Decomposition Methods for Nonlocal Equations	Karim Rhafir (Online) Aggregated algebraic multi-subdomain method for Markov chains	Radim Dvořák Elastic wave propagation: Finite element discretization with Localized Lagrange multipliers domain decomposition and asynchronous integration in time		



27th International Conference on Domain Decomposition Methods

DD27

Prague, July 25–29, 2022

notes:

All times are in Central European Summer Time (CEST)

Light brown color means hybrid session

WEDNESDAY, July 27

HALL 1 (B286)		Coffee break		
8:30	Plenary lectures Chairperson: Ralf Kornhuber	Rob Scheichl Multiscale Spectral Generalised Finite Element Methods		
HALL 2 (C215)		HALL 3 (C217)	HALL 4 (C219)	HALL 5 (C221)
MS12: HPC Industrial Session Chairperson: Tomáš Kozubek		MS10: Parallel-in-Time Methods: Recent Developments and Applications Chairperson: Thibaut Lunet	MS16: Nonlinear Domain Decomposition Methods Chairperson: Axel Klawonn	MS4: Spectral Coarse Spaces in Domain Decomposition Methods and Multiscale Discretizations Chairperson: Victorita Dolean
9:45	Tomáš Karásek National Competence Center in HPC Czech Republic: Success stories	Martin Veronique A Detailed Fourier Mode Analysis of Schwarz Waveform Relaxation Methods	David Keyes Advances in Nonlinear Preconditioning	Martin J. Gander An Introduction to Spectral Coarse Space Techniques in Domain Decomposition
10:15	Harvey Richardson HPE Exascale progress and related activities	Ignace Bossuyt A numerical study of a micro-macro model-reduced Parareal method for scale-separated SDEs	Alena Kopanicakova Nonlinear multilevel and domain decomposition methods for phase-field fracture simulations	Pierre Jolivet Spectral overlapping Schwarz methods in PETSc with HPDDM
10:45	Jean-Pierre Panziera Addressing the Exascale challenge	Austra Pogazelskyte Linear Convergence Bound for Parareal with Spatial Coarsening	Alexander Heinlein Robust Coarse Spaces for Nonlinear Schwarz Methods	Frederic Nataf A GenEO Domain Decomposition method for Saddle Point problems
11:15	Petr Plodík Nvidia Hopper – the new architecture for HPC and AI applications	Felix Kwok Analysis of a Three-Level Variant of Parareal	Axel Klawonn Adaptive Elimination and Adaptive Coarse Spaces in Nonlinear FETI-DP Methods	Lambert Teisen A Two-Level Domain Decomposition Method for Periodic Schrödinger Eigenstates in Anisotropically Expanding Domains
11:45	Lunch break			
13:00	Wednesday tours			

THURSDAY, July 28

HALL 1 (B286)		Coffee break		
8:30	Plenary lectures Chairperson: Axel Klawonn	Jakub Šístek 9:15 Applications of multilevel BDDC to problems of incompressible flows		
10:00	Coffee break			
HALL 2 (C215)		HALL 3 (C217)	HALL 4 (C219)	HALL 5 (C221)
MS15: Parallel Solvers for Helmholtz Problems Chairperson: Niall Bootland		MS17: HPC Aspects of Domain Decomposition and Other Numerical Methods Chairperson: Zdeněk Dostál	MS02: New Developments in Substructuring Domain Decomposition Methods Chairperson: Gabriele Ciaramella	MS04: Spectral Coarse Spaces in Domain Decomposition Methods and Multiscale Discretizations Chairperson: Alexander Heinlein
10:30	Ruiyang Dai Improved sweeping preconditioners with non-overlapping checkerboard domain decomposition applied to Helmholtz problems with multiple right-hand sides	Jakub Kružík Alternatives to the FETI natural coarse space using local Moore-Penrose pseudoinverse	Tommaso Vanzan On spectral coarse spaces for the substructured parallel Schwarz method and their optimality	Ralf Kornhuber Towards Numerical Simulation of Multiscale Fault Networks
11:00	Janosch Preuss Learned infinite elements as transmission conditions in sweeping preconditioners	David Horák MPRGP stopping criterium in SMALSE algorithm for contact problems solved by TFETI	Serge Van Crielingen A PETSc Parallel Implementation of Substructured One- and Two-level Schwarz Methods	Moritz Hauck Superlocalization of elliptic multiscale problems
11:30	Wei Leng (Online) The Diagonal Sweeping DDM with trace transfer for the Helmholtz Equation	Oldřich Vlach Unpreconditioned H-FETI: Conditioning of Schur complements of clusters, implementation, and solving huge problems	Pratik M. Kumbhar Linear and nonlinear substructured Restricted Additive Schwarz iterations and preconditioning	Kathrin Smetana A fully algebraic and robust two-level overlapping Schwarz method based on optimal local approximation spaces
12:00	Dalibor Lukas Parallel BEM Accelerated on GPU			Julia Schleich Generating (quasi-)optimal local approximation spaces in time in parallel
12:30	Lunch break			
HALL 1 (B286)		Coffee break		
14:00	Plenary lecture Chairperson: Petter Bjerstad	The Olof Widlund Prize Lecture (presented by Marcus Sarkis) RAS/ASH and NOSAS		
15:30	Coffee break			
HALL 2 (C215)		HALL 3 (C217)	HALL 4 (C219)	HALL 5 (C221)
MS15: Parallel Solvers for Helmholtz Problems Chairperson: Janosch Preuss		MS17: HPC Aspects of Domain Decomposition and Other Numerical Methods Chairperson: Daniel Langr	MS7: Reusing information in iterative methods Chairperson: Petr Vacek	MS4: Spectral Coarse Spaces in Domain Decomposition Methods and Multiscale Discretizations Chairperson: Alexander Heinlein
16:00	Marcella Bonazzoli Domain decomposition preconditioners for non-self-adjoint or non-positive-definite problems	Pavel Kůs A parallel domain decomposition solver for immersed boundary finite element method	Kirk M. Soodhalter A unifying framework for recycling-based iterative methods	Nicole Spillane AWG, a new Algebraic Solver for SPD Problems
16:30	Niall Bootland GenEO for frequency-domain wave problems	Tomáš Oberhuber TNL: Numerical library for modern parallel architectures	Laura Grigori Recycling Krylov subspaces through deflation for solving sequence of linear systems	Jascha Knepper Low-dimensional adaptive coarse spaces for Schwarz methods and multiscale elliptic problems
17:00	Vandana Dwarka Towards Parallel Shifted and Deflated Preconditioning for Helmholtz Problems	Ondrej Meca Highly parallel loading and processing of unstructured meshes	Yanfei Xiang A block minimum residual norm subspace solver with partial convergence management for sequences of linear systems	Janine Weber Three-level adaptive BDDC using frugal constraints
17:30	Hui Zhang (Online) Scaling of one-level Schwarz methods for the Helmholtz Equation: a numerical study based on Fourier analysis	Jakub Solovský (Online) BDDC for MHFEM discretization of unsteady two-phase flow in porous media		Victorita Dolean Spectral coarse spaces for indefinite and non-self adjoint problems
20:00	Conference dinner			

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FRIDAY, July 29

HALL 2 (C215)		HALL 3 (C217)	HALL 4 (C219)	HALL 5 (C221)
MS15: Parallel Solvers for Helmholtz Problems Chairperson: Niall Bootland		MS17: HPC Aspects of Domain Decomposition and Other Numerical Methods Chairperson: Tomáš Oberhuber	MS7: Reusing information in iterative methods Chairperson: Kirk M. Soodhalter	MS4: Spectral Coarse Spaces in Domain Decomposition Methods and Multiscale Discretizations Chairperson: Kathrin Smetana
8:30	Pierre-Henri Cocquet Dispersion minimizing finite difference scheme for the two-dimensional Helmholtz equation	Martin Hanek Multilevel BDDC for nonsymmetric problems of incompressible flows	Eric de Sturler Golub-Kahan bidiagonalization for streaming problems	Marcus Sarkis NOSAS: Helmholtz, Economical and Three-Level Versions
9:00	Tobias Koeppel A semi matrix-free twogrid preconditioner for the Helmholtz equation with near optimal shifts	Daniel Langr Lanczos Algorithm for Hybrid MPI+OpenMP Parallel Programming Model with Checkerboard Matrix Partitioning	Buu-Van Nguyen Recycling solutions of approximative systems	Robert Scheichl Multilevel Spectral Domain Decomposition
9:30	Shihua Gong (Online) Convergence of Restricted Additive Schwarz method with impedance transmission conditions for discretized Helmholtz problems	Pilhwa Lee (Online) FETI-DP and BDDC preconditioners for 2D and 3D Biot models with discontinuous Galerkin discretization	Petr Vacek Stopping criteria and recycling strategies for coarsest grid solvers in multigrid V-cycle method	Ahmed El Kerim Asynchronous global-local non-invasive coupling
10:00	Gustavo Ramirez-Hidalgo Coarsest-Level Improvements of Multigrid for Lattice QCD on Large-Scale Computers			
10:30	Coffee break			
HALL 1 (B286)				
11:00	Plenary lecture Chairperson: Martin Gander			
11:45	Florence Hubert (Online) On discrete optimized Schwarz algorithms for elliptic problems			
12:00	Zdeněk Dostál, Laurence Halpern Closing of the conference			
				Lunch