



Conference Program and General Information



General Information

Registration: the registration will start on Monday July 25, 2016 at 8:20 at Bo Palace (Via 8 Febbraio 1848 nr 8) and will continue in the Vallisneri building (Via Ugo Bassi, nr 58b) on Monday afternoon, till the end of the conference. Please note that on Monday, the morning session will be held at Bo Palace, while the afternoon session at the Vallisneri building, where the remaining days of the conference will take place. For instructions on how to reach the Vallisneri building from the Bo Palace, please see the map of the conference sites (a 20 minute walk). Note that Bo Palace is also a tourist attraction.

Internet access: Wi-fi internet access via eduroam will be available in the conference venue, where desktop computers will also be available. For those participants who do not have an eduroam account, a special login and password will be provided during the conference. The same wireless connection will also be available in the room 1A150 at the first floor of the Math Department, via Trieste 63.

Lunch: During the conference, the university canteen 'Mensa Nord Piovego' (Via G. Colombo 1) will be open http://www.esupd.gov.it/it/Pagine/Mensa.aspx?idmensa=ME_02. Participants can access the canteen only with the conference badge and will be asked to pay their meal. Several other options like restaurants and bars are available in the area around the conference venue.

Excursion: The excursion will take place Wednesday afternoon. We meet at 14:45 at the entrance of the Math Department, Via Trieste 63. We shall visit the magnificent Villa dei Vescovi which is the most important pre-Palladian country house of the Renaissance. See http://www.visitfai.it/villadeivescovi/ to have an idea of the magic atmosphere of the place. During the visit, the participants will also have the opportunity to see many important pieces of art in the frame of a contemporary art glass exhibition which takes place inside the villa. After the visit, the participants will have the possibility to purchase excellent local wine at a winery store nearby the villa.

The excursion fee is 25 Euros (to be paid in cash at the registration desk of the conference during the first day of the congress).

More historical information about the villa can be found at the webpage http://eng.fondoambiente.it/beni/villa-dei-vescovi-fai-properties.asp

Social dinner: we meet at the restaurant 'Agli Eremitani', Via Porciglia 29, Padova at 20:00 on Thursday July 28. To attend the dinner one should carry the dinner voucher which will be given with the conference material here in Padova. We ask all accompanying people who wish to attend the social dinner to register as accompanying participant and to pay the corresponding registration fees.

Meeting of the Steering Committee: the Steering Committee will meet on Tuesday July 26 at 18:30 in Room 1C150, first floor of the Math Department, Via Trieste 63.

Monday, July 25, 2016

Morning session [Bo Palace, Via 8 Febbraio 1848 nr 8]

	Aula Magna - Bo		
8.20 9.45 10.00	Registration Opening D. Colton		
10.50	Coffee Break		
11.20 12.10	F. Gazzola W. Hackbusch		
	Lunch break		

Afternoon session [Vallisneri Building, Via Ugo Bassi, nr 58b]

	Aula Magna	Room B	Room C	Room D
	Mini-symposium ¹			
14.45 15.15 15.45	A. Arena C. Marchionna F. Dell'Oro	V. Mityushev K. Ruotsalainen A. Kleefeld	B. Michielsen B. Alzaix M.S. Trindade	I.C. Furtado T. Le O. Shoham
16.15	Coffee Break	Coffee Break	Coffee Break	Coffee Break
16.45 17.15 17.45	G. Piana U. Battisti C. Gasparetto	M. Ferreira N. Vieira M. Rodrigues	A. Setukha R. Barros H. Hirayama	T. Marotto A. Pires C. A. Ladeia

Tuesday, July 26, 2016 [Vallisneri Building, Via Ugo Bassi, nr 58b]

	Aula Magna	Room B	Room C	Room D
9.00 9.50	H. Ammari C. Tretter			
10.40	Coffee break			
	Mini-symposium ¹			
11.10 11.40 12.10 12.40	<mark>R. Rango</mark> D. Buoso E. Bottazzi	G. Auchmuty D. Mitrea V. Leonessa M. Mitrea	A. Mennouni M.P. Ahues Blanchait R. Fernandes A. Rane	A. Heimlich L.F.F.C. Barcellos M. Pourreza B. Zubik-Kowal
	Lunch break	Lunch break	Lunch break	Lunch break
	BDIE session ²			
14.45 15.15 15.45	S.E. Mikhailov C. Fresneda-Portillo D. Natroshvili		P. Dimitrakopoulos M. Ruiz B. Fitzpatrick	H. Pourreza H. Rajabi Mashadi J. Sadeh
16.15	Coffee break	Coffee break	Coffee break	Coffee break
16.45 17.15 17.45	M. Kohr T.G. Ayele T.T. Dufera		D. Volkov P. Drygaś S. Stavtsev	A. Karimpour S. Askarian Z. Ghanaei

18.30 Meeting of the Steering Committee in Room 1C150, first floor of the Math Department, Via Trieste 63.

Wednesday, July 27, 2016 [Vallisneri Building, Via Ugo Bassi, nr 58b]

	Aula Magna	Room B	Room C	Room D
9.00 9.50	A. Cialdea O. Steinbach			
10.40	Coffee break			
11.10 11.40 12.10	R. Duduchava O. Chkadua A. Malaspina		L. Jódar G. Hattori D. Singh	H.F. Campos Velho R. Hazlett J.C.L. Fernandes
	Lunch break		Lunch break	Lunch break
	Excursion		Excursion	Excursion

Thursday, July 28, 2016 [Vallisneri Building, Via Ugo Bassi, nr 58b]

	Aula Magna	Room B	Room C	Room D
9.00	M. Dauge			
9.50	R. Hiptmair			
10.40	Coffee break			
	Mini-symposium ³	Mini-symposium ⁴		
11.10	W. Wendland	G.A. Chechkin		B.E.J.Bodmann
11.40		A. Thöns-Zueva		E.B. Hauser
12.10	S. Rogosin	J. Orlik		F.R. Oliveira
12.40	G. Mishuris			T. Tirabassi
	Lunch break	Lunch break		Lunch break
14.45	L. Castro	T.Shaposhnikova		H.F. Campos Velho
15.15	N. Gorbushin	F. Raimondi		C.E. Espinosa
15.45	A. Kisil	D. Gómez		B. K. Bainy
16.15	Coffee break	Coffee break		Coffee break
16.45	A. Nobili	E. Zappale		
17.15	L. Di Ruvo	M. Villanueva		
17.45	T. Hill	M.E. Pérez		
	Social Dinner	Social Dinner		Social Dinner

Mini-symposium Wiener-Hopf Techniques and their Applications
Mini-symposium Asymptotic Analysis: Homogenization and Thin Structures

Friday, July 29, 2016 [Vallisneri Building, Via Ugo Bassi, nr 58b]

	Aula Magna	Room B	Room C	Room D
		Mini-symposium ⁴		
9.00 9.30 10.00 10.30	N. Odishelidze T. Davitashvili N. Shavlakadze Coffee Break	M. Perel R. Bunoiu G. Cardone Coffee break	Y. Karlovich G. Kohr A. Azam Coffee break	P.J. Harris J. Venton R. Martin Coffee break
		Mini-symposium ⁵		
11.00 11.30 12.00 12.30	L. Morini ³ R. Younis J.E. Lewis C. Constanda	A. Schädle L. Nannen J. Ott		D. Chappell V. Vasilyev M. Starčević M. Manzi
	Lunch break	Lunch break	Lunch break	Lunch break
14.30 15.00 15.30		K. Schmidt G. Unger P. Kraft	M. Gachpazan B. Azzouzi A. Vahidian Kamyad	H.M. Ruivo S. Maldaner M.E. Welter
16.00	Coffee break	Coffee break	Coffee break	Coffee break
16.30	Closing ceremony			

Mini-symposium Wiener-Hopf Techniques and their Applications
Mini-symposium Asymptotic Analysis: Homogenization and Thin Structures
Mini-symposium Wave Phenomena

Monday, July 25, 2016

Morning Session

Bo Palace, Via 8 Febbraio 1848 nr 8

	Aula Magna - Bo (Plenary talks)
8.20	Registration
9.45	Opening
Chair	C. Constanda
10.00	D. Colton, A Qualitative Approach to Inverse Scattering Theory for Inhomogeneous
	Media: The Transmission Eigenvalue Problem
10.50	Coffee Break
11.20	F. Gazzola, How can the blow up of the lunar perigee explain the instability of suspension
	bridges?
12.10	W. Hackbusch, The Technique of Hierarchical Matrices
13.00	Lunch Break

Afternoon Session

Vallisneri Building, Via Ugo Bassi, nr 58b

	Aula Magna
Chair	A. Ferrero
14.45	A. Arena, Vortex-induced dynamic instabilities in suspension bridges due to parametric
	and autoparametric resonance
15.15	C. Marchionna, An instability result for suspension bridges
15.45	F. Dell'Oro, Analysis of the steady states of elastically-coupled nonlinear double-beam
	systems
16.15	Coffee Break
Chair	C. Marchionna
16.45	G. Piana, Enhanced linearized flutter analysis of suspension bridges
17.15	U. Battisti, Energy Transfer between Modes in a Nonlinear Beam Equation
17.45	C. Gasparetto, Resonance tongues for the Hill equation with squared Duffing coefficients

	Room B
Chair	S.V. Rogosin
14.45	V. Mityushev, Composites with invisible inclusions: eigenvalues of \mathbb{R} -linear problem
15.15	K. Ruotsalainen, A condition for the existence of trapped modes
15.45	A. Kleefeld, The interior transmission eigenvalue problem for an inhomogeneous media
	with a conductive boundary
16.15	Coffee Break
Chair	V. Mityushev
16.45	M. Ferreira, Fundamental solutions of multi-dimensional time-fractional operators
17.15	N. Vieira, Fundamental solutions for 3-dimensional fractional Laplace and Dirac oper-
	ators
17.45	M. Rodrigues, New operational relations and applications of a fractional Fourier trans-
	form

	Room C
Chair	S.E. Mikhailov
14.45	B. Michielsen, Stochastic Boundary Integral Equations
15.15	B. Alzaix, Computational efficiency for Herberthson's integral equation
15.45	M.S. Trindade, Spectral Tau method for systems of nonlinear integro-differential equa-
	tions
16.15	Coffee Break
Chair	T.G. Ayele
16.45	A. Setukha, Shifting the boundary conditions to the middle surface in the numerical
	solution of Neumann boundary value problems using integral equations.
17.15	R. Barros, Shifting strategy in the spectral analysis for the spectral Green's function
	nodal method for adjoint S_N problems in slab-geometry
17.45	H. Hirayama, Numerical Solution of Partial Differential Equations by the Taylor Series
	Method

	Room D
Chair	B. Zubik-Kowal
14.45	I.C. Furtado, Simulation in porous media: a functional solution for unsaturated media
15.15	T. Le, Optimized random forest classification accuracy by private evaporative cooling
	feature selection
15.45	O. Shoham, Droplet Deposition and Coalescence in Curved Pipes
16.15	Coffee Break
Chair	O. Shoham
16.45	T. Marotto, Mathematical Modeling of One-Dimensional Two-Phase Oil Displacement
	by Steam Injection with Solvent Addition
17.15	A. Pires, A Semi-Analytical Solution for a Build-up Test for a Horizontal Well in an
	Anisotropic Gas Reservoir
17.45	C. A. Ladeia, On the radiative conductive transfer equation: A heuristic convergence
	criterion by stability analysis

Tuesday, July 26, 2016

Vallisneri Building, Via Ugo Bassi, nr 58b

	Aula Magna (Plenary talks)
Chair	M. Costabel
9.00	H. Ammari, Resonances for plasmonic nanoparticles
9.50	C. Tretter, Operator theory and applications: a fruitful interplay
10.40	Coffee Break

	Aula Magna
Chair	E. Berchio
11.10	R. Rango, Static and dynamic analysis of laminated plates using enriched macro ele-
	ments
11.40	D. Buoso, Shape optimization for the deck of a suspension bridge
12.10	E. Bottazzi, Generalized functions in the Calculus of Variations and in PDEs
13.10	Lunch Break

	Room B
Chair	A. Cialdea
11.10	G. Auchmuty, The SVD of the Poisson Kernel
11.40	D. Mitrea, The BMO-Dirichlet problem for elliptic systems in the upper-half space and
	quantitative characterizations of VMO
12.10	V. Leonessa, Differential operators associated with Markov operators
12.40	M. Mitrea, The role of infinitesimal flatness in the solvability of elliptic boundary prob-
	lems in uniformly rectifiable domains
13.10	Lunch Break

	Room C
Chair	P.J. Harris
11.10	A. Mennouni, Kulkarni method for the generalized airfoil equation
11.40	M.P. Ahues Blanchait, $An L^1$ -Product-Integration Method in Astrophysics
12.10	R. Fernandes, Iterated Kantorovich versus Kulkarni method for Fredholm integral equa-
	tions
12.40	A. Rane, Asymptotic expansions of iterated Galerkin solution of second kind Fredholm
	integral equations with Green's type kernels
13.10	Lunch Break

	Room D
Chair	J. Sadeh
11.10	A. Heimlich, GPU based mixed precision PWR depletion calculation
11.40	L.F.F.C. Barcellos, On the decomposition of time dependent reactor neutron spectra
	into fission, intermediate and thermal distributions: a new Monte Carlo solver with
	continuous energy
12.10	M. Pourreza, A metaheuristic approach for an optimized design of a silicon carbide
	operational amplifier
12.40	B. Zubik-Kowal, Time and space splitting methods for systems of partial functional
	differential equations modeling tumor growth
13.10	Lunch Break

Afternoon Session

	Aula Magna
Chair	M. Kohr
14.45	S.E. Mikhailov, Segregated Boundary-Domain Integral Equations for Variable-
	Coefficient Scalar BVPs on Lipschitz Domains
15.15	C. Fresneda-Portillo, A New Family of Boundary Domain Integral Equations for a
	Mixed Elliptic BVP with Variable Coefficient in Unbounded Domains
15.45	D. Natroshvili, Nonlinear boundary-domain integral equations of boundary value prob-
	lems for scalar quasilinear elliptic PDEs
16.15	Coffee Break
Chair	S.E. Mikhailov
16.45	M. Kohr, Boundary value problems for nonlinear Brinkman systems in Lipschitz do-
	mains
17.15	T.G. Ayele, Analysis of Boundary-Domain Integral Equations For Variable Coefficient
	Mixed BVP in 2D
17.45	T.T. Dufera, Analysis of Boundary-Domain Integral Equations For Neumann BVP with
	Variable Coefficient in 2D

	Room C
Chair	G. Auchmuty
14.45	P. Dimitrakopoulos, Spectral Boundary Element Algorithms for Multi-Length Interfacial
	Dynamics
15.15	M. Ruiz, Theory of plasmonic metasurfaces
15.45	B. Fitzpatrick, Resonances for bubbly media
16.15	Coffee Break
Chair	K. Ruotsalainen
16.45	D. Volkov, Existence of Frequency Modes Coupling Seismic Waves and Vibrating Tall
	Buildings
17.15	P. Drygaś, Effective elastic properties of random two - dimensional composites
17.45	S. Stavtsev, Fast parallel algorithms for solving integral equations in boundary value
	problems of diffraction

	Room D
Chair	B. Zubik-Kowal
14.45	H. Pourreza, Kinect Depth Recovery based on Local Filters and Plane Primitives
15.15	H. Rajabi Mashadi, Application of Stochastic Dynamic Programming in Demand
	Dispatch-based optimal operation of a Micro-grid
15.45	J. Sadeh, Performance Assessment of a New FFT Based High Impedance Fault Detec-
	tion Scheme
16.15	Coffee Break
Chair	H. Rajabi Mashadi
16.45	A. Karimpour, Online Traffic Prediction Using Time Series: A Case Study
17.15	S. Askarian, Scalable and view-independent multi-projector display for arbitrary surface
17.45	Z. Ghanaei, Automatic separation of distinct retinal vessels

Wednesday, July 27, 2016

Vallisneri Building, Via Ugo Bassi, nr 58b

	Aula Magna (Plenary talks)
Chair	W. Wendland
9.00	A. Cialdea, The Simple Layer Potential Approach to the Dirichlet Problem: an Exten-
	sion to Higher Dimensions of the Muskhelishvili Method and Applications
9.50	O. Steinbach, Space time boundary element methods for the heat equation
10.40	Coffee Break

	Aula Magna
Chair	D. Natroshvili
11.10	R. Duduchava, Mixed boundary value problems for the Helmholtz equation in a model
	2D angular domain
11.40	O. Chkadua, Dynamical Interface Crack Problems for Metallic and Electro-Magneto
	Elastic Composite Structures
12.10	A. Malaspina, Integral representations for solutions of some BVPs in elasticity theory
12.40	Lunch Break

	Room C
Chair	F. Gazzola
11.10	L. Jódar, Two dimensional Gauss-Hermite quadrature method for jump-diffusion
	partial-integro differential option pricing models
11.40	G. Hattori, An acceleration approach for fracture problems in the extended boundary
	element method (XBEM) framework
12.10	D. Singh, An effective tool for solving integral equations via fixed point theorems
12.40	Lunch Break

	Room D
Chair	A. Pires
11.10	H.F. Campos Velho, Strategies for a parallel version to the SUPIM code
11.40	R. Hazlett, Flux Characterization in Heterogeneous Transport Problems by the Bound-
	ary Integral Method
12.10	J.C.L. Fernandes, On the solution of the multi-group neutron transport equation with
	error estimates
12.40	Lunch Break

Thursday, July 28, 2016

Vallisneri Building, Via Ugo Bassi, nr 58b

	Aula Magna (Plenary talks)
Chair	M.P. Ahues Blanchait
9.00	M. Dauge, Converging expansions for self-similar perforations of a plane sector
9.50	R. Hiptmair, Multi-Trace Boundary Element Methods
10.40	Coffee Break

	Aula Magna
Chair	L. Castro
11.10	W. Wendland, On the coupled Darcy–Stokes flow
12.10	S.V. Rogosin, Constructive Methods for Factorization of Matrix Functions
12.40	G. Mishuris, Asymptotic Methods for Factorization of a Class of Matrix Functions with
	Stable Partial Indices
13.10	Lunch Break

	Room B
Chair	M.E. Pérez
11.10	G.A. Chechkin, Nematic Liquid Crystals
11.40	A. Thöns-Zueva, Multiharmonic analysis for nonlinear acoustics with small excitation
	amplitude
12.10	J. Orlik, Outer-plane properties of thin heterogeneous periodic layers made of beams
13.10	Lunch Break

	Room D
Chair	H.F. Campos Velho
11.10	B.E.J. Bodmann, A new diffeomorph conformal methodology to solve flow problems
	with complex boundaries by an equivalent plane parallel problem
11.40	E.B. Hauser, Kinetic Modeling of Carbon-11 Pitsburgh Compound-B ($[^{11}C]PIB$) with
	Laplace Transform
12.10	F.R. Oliveira, Monoenergetic neutron space-kinetic equation in full cylinder symmetry
	with axial heterogeneity: A novel analytical solution
12.40	T. Tirabassi, Influence of dry deposition velocity to the ground in modeling of dispersion
	of the air pollutants
13.10	Lunch Break

Afternoon Session

	Aula Magna
Chair	S. Rogosin
14.45	L. Castro, Constructive factorization of Wiener-Hopf operators on Sobolev spaces with
	symmetry
15.15	N. Gorbushin, Fracture waves in a structured media with a moving boundary
15.45	A. Kisil, Approximate factorisation of matrix Wiener–Hopf arising in acoustics
16.15	Coffee Break
Chair	G. Mishuris
16.45	A. Nobili, Steady state propagation of a rectilinear crack in a thin elastic plate supported
	by a Winkler elastic foundation
17.15	L. Di Ruvo, Uniqueness condition for the (local) solution of the electrostatic micro -
	cantilever beam
17.45	T. Hill, On Wiener-Hopf and Mellin operators arising in the theory of Lévy processes

	Room B
Chair	G. Cardone
14.45	T. Shaposhnikova, Averaging of the problems for the p – Laplace operator in perforated
	domains with nonlinear boundary conditions involving a large parameters
15.15	F. Raimondi, Singular problems with nonlinear Robin conditions in perforated domains
15.45	D. Gómez, Homogenization for the p-Laplace operator in perforated media along a man-
	ifold
16.15	Coffee Break
Chair	G.A. Chechkin
16.45	E. Zappale, Bending phenomena in thin domains
17.15	M. Villanueva, Thin domains with oscillatory boundaries beyond the purely periodic
	case
17.45	M.E. Pérez, Boundary homogenization in perforated domains for adsorption problems

	Room D
Chair	T. Tirabassi
14.45	H.F. Campos Velho, Cancer dynamics: parameter analysis and identification
15.15	C.E. Espinosa, On the neutron point kinetic equation with reactivity decomposition based
	on two time scales
15.45	B. K. Bainy, Rocket exhaust dispersion model: deposition parameters analysis
16.15	Coffee Break

Friday, July 29, 2016

Vallisneri Building, Via Ugo Bassi, nr 58b

	Aula Magna
Chair	V. Vasilyev
9.00	N. Odishelidze, The boundary value contact problem of electro - elasticity for piecewise-
	homogeneous piezo - elastic plate with inclusion and cut
9.30	T. Davitashvili, On one nonlocal contact problem for poisson's equation in 2d area
10.00	N. Shavlakadze, The two-dimensional integro-differential equations and their applica-
	tions in the theory of viscoelasticity
10.30	Coffee Break
Chair	G. Mishuris
11.00	L. Morini, Weight functions analysis for interfacial cracks in piezoelectric materials
11.30	R. Younis, A scalable two-stage Fast Multipole Method preconditioner for coupled flow
	and transport simulation
12.00	J.E. Lewis, Double Layer Kernels on C^1 Domains and C^1 Curvilinear Polygons
12.30	C. Constanda, Bending of Elastic Plates: Generalized Fourier Series Method
13.00	Lunch Break

	Room B
Chair	T. Shaposhnikova
9.00	M. Perel, Asymptotic solutions of Maxwell equations in layered periodic structure
9.30	R. Bunoiu, Homogenization of materials with sign changing coefficients
10.00	G. Cardone, Uniform resolvent convergence for a planar strip with fast oscillating
	boundary
10.30	Coffee Break
Chair	W. Dörfler
11.00	A. Schädle, Transparent boundary conditions for inhomogenous exterior domains
11.30	L. Nannen, Hardy space method for waveguide problems
12.00	J. Ott, On Scattering at 2D Open Waveguides
13.00	Lunch Break

	Room C
Chair	O. Chkadua
9.00	Y. Karlovich, C^* -algebras of Bergman type operators over domains with angles
9.30	G. Kohr, Loewner theory in the study of univalent mappings in higher dimensions
10.00	A. Azam, On Fredholm integral equations
10.30	Coffee Break

	Room D
Chair	H.F. Campos Velho
9.00	P.J. Harris, A Mathematical Model Of Cell Clustering Due To Chemotaxis
9.30	J. Venton, A poroelastic model of spinal cord cavities
10.00	R. Martin, Collocation Methods for Solving Two Dimensional Neural Field Models on
	Complex Triangulated Do- mains
10.30	Coffee Break
Chair	G. Kohr
11.00	D. Chappell, The method of superposition for near-field acoustic holography in a semi-
	anechoic chamber
11.30	V. Vasilyev, Pseudo-differential equations and related continual and discrete boundary
	value problems
12.00	M. Starčević, A Navier type wall-law for an incompressible flow in a rough pipe
12.30	M. Manzi, Choquet integrals based on Hausdorff capacity
13.00	Lunch Break

Afternoon Session

	Room B
Chair	A. Schädle
14.30	K. Schmidt, On absorbing boundary conditions in a waveguide for acoustic models at
	low viscosity
15.00	G. Unger, Boundary integral equations and boundary element methods for Maxwell's
	eigenvalue problems
15.30	P. Kraft, Optimization of 3D-Waveguides using Finite Elements and Transformation
	Optics
16.00	Coffee Break

	Room C
Chair	D. Buoso
14.30	M. Gachpazan, Numerical solution of nonlinear mixed Volterra - Fredholm integral
	equations in complex plane via PQWs
15.00	B. Azzouzi, On the Convergence of Moving Average Processes for Dependent Random
	Variables
15.30	A. Vahidian Kamyad, An efficient method to solve a fractional differential equation
16.00	Coffee Break

	Room D
Chair	B.E.J. Bodmann
14.30	H.M. Ruivo, Severe precipitation evaluation in Brazil: Data mining approach
15.00	S. Maldaner, Determination of surface soil temperature using a numerical solution to
	heat conduction equation
15.30	M.E. Welter, Counter-gradient term applied to the turbulence parameterization in the
	BRAMS
16.00	Coffee Break