

Legenda (see list of Abstracts)

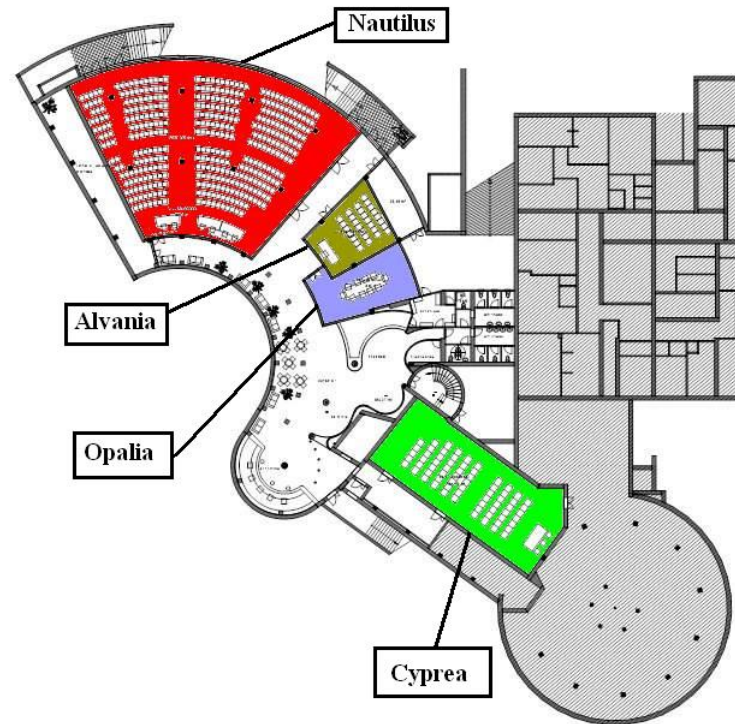
Special Sessions

SN.M means the M-th talk of the Special Session SN

S1	Approximation Theory	organized by Giuseppe Mastroianni and Wiesław Pleśniak
S2	Extrapolation and Convergence Acceleration	organized by Claude Brezinski and Ernst Joachim Weniger
S3	Inverse Problems and Regularization	organized by Martin Hanke and Per Christian Hansen
S4	Iterative Methods for Linear Systems	organized by Zhong-Zhi Bai and Hassane Sadok
S5	Nonlinear Evolution Equations	organized by Tuncay Aktosun and Sebastiano Seatzu
S6	Optimization and Management Science	organized by Marcos Raydan and Paola Zuddas
S7	Orthogonal Polynomials and Quadrature	organized by Adhemar Bultheel and Walter Gautschi
S8	Padé Approximation and Continued Fractions	organized by Bernd Beckermann and Annie Cuyt
S9	Partial Differential Equations	organized by Carsten Carstensen and Alfio Quarteroni
S10	Structured Linear Algebra	organized by Dario Bini and Marc Van Barel
S11	History of Computational Mathematics	organized by Michela Redivo-Zaglia and Giuseppe Rodriguez

General Session

GM means the M-th talk of the General Session



Monday 10th October

8:45– 9:30 OPENING			
Chair:	NAUTILUS: O. Pironneau		
9:30–10:30 P.G. Ciarlet Shell models: old and new			
Chair	NAUTILUS: S4	CYPREA: S5	ALVANIA: S7
OPALIA: J.M. MARTINEZ			
10:30–11:00	M.H. Gutknecht S4.2 Deflation based preconditioning of linear systems of equations	A. Degasperis S5.2 Integrability and solvability of nonlocal wave interaction models	F. Marcellán S7.4 N-coherent pairs of measures
			J.C. Trillo G63 Comparison among multiresolution schemes with and without error control strategies
11:00–11:30 COFFEE BREAK			
11:30–12:00	Z. Strakoš S4.7 Matching moments and Krylov subspace methods	P.M. Santini S5.8 Commuting vector fields and integrable PDEs of hydrodynamic type	G.V. Milovanović S7.5 Multiple orthogonal polynomials and generalized quadrature formulae
12:00–12:30	H. Sadok S4.6 A new approach to conjugate gradient and GMRES convergence	B. Prinari S5.6 Coupled Maxwell-Bloch equations with inhomogeneous broadening for a 3-level system	S.E. Notaris S7.6 The error norm of quadrature formulae
12:30–13:00	K. Jbilou S4.4 Block Arnoldi-based methods for large scale discrete-time algebraic Riccati equations	P. Sacks S5.7 Numerical solution of inverse scattering problems and application to nonlinear evolution equations	P. Woźny S7.9 Properties and applications of constrained dual Bernstein polynomials
			J. Winkler G67 Approximate greatest common divisors of Bernstein polynomials
			D. Lera G37 Properties and numerical results of a parallel algorithm for global optimization problems
			G. Zanghirati G68 ParJoInv: high-performance scientific computing for multidimensional joint inversion
13:00–14:00 LUNCH			
Chair	NAUTILUS: S4	CYPREA: S11	ALVANIA: S7
OPALIA: G.M. DEL CORSO			
16:00–16:30	Y.J. Wu S4.8 Preconditioned multiparameter and Newton-multiparameter iterative methods for systems of equations	M. Benzi S11.1 Early research on matrix iterations: the Italian contribution	A. Bultheel S7.1 Quadrature on the positive real line with quasi and pseudo orthogonal rational functions
16:30–17:00	B. Zheng S4.9 Distinct preconditioned HSS iteration method for non-Hermitian positive definite linear systems	H. Le Ferrand S11.5 Algebraic continued fractions: the contribution of R. de Montessus de Ballore	R. Cools S7.2 From optimal cubature formulae to Chebyshev lattices: a way towards generalised Clenshaw-Curtis quadrature
17:00–17:30	K. Hayami S4.3 Inner-iteration GMRES methods for underdetermined least squares problems	D. Tournes S11.7 Calculating firing tables in 18th and 19th centuries	K. Deckers S7.3 Asymptotics for Christoffel functions based on orthogonal rational functions
			A. Salam G58 Equivalence between modified symplectic Gram-Schmidt and Householder SR algorithms
			K. Aihara G3 Convergence of the IDRstab method using the residual smoothing techniques
			S. Fujino G23 A study on preconditioning suited for IDR(s)-residual reduction method
17:30–18:00 COFFEE BREAK			
Chair	NAUTILUS: S4	CYPREA: P. LIMA	ALVANIA: S7
OPALIA: A. SALAM			
18:00–18:30	G. Meurant S4.5 The computation of isotropic vectors	D. Okada G47 On a formal solution for a discretized SIRS epidemic model	T.E. Perez S7.7 Continuous Sobolev orthogonal polynomials on the unit ball
18:30–19:00	Z.-Z. Bai S4.1 Preconditioning and iterative methods for complex linear systems	E. Longo G39 Appell polynomials of second kind and related interpolation problem	W. Van Assche S7.8 Orthogonal polynomials on a bi-lattice
19:00–19:30		T.Z. Ismagilov G29 Modelling photonic crystal devices using second order finite volume method	L. Bergamaschi G7 Relaxed mixed constraint preconditioners for generalized saddle point linear systems
19:45–20:45 COCKTAIL HOUR (OFFERED BY SPRINGER)			
20:45 DINNER			

Tuesday 11th October

Chair:	NAUTILUS: A. Degasperis			
9:00–10:00	M. Ablowitz Nonlinear waves: from oceans to “optical graphene”			
Chair	NAUTILUS: S10	CYPREA: S9	ALVANIA: S6	OPALIA: S11
10:00–10:30	S. Serra Capizzano S10.7 Toeplitz operators with matrix-valued symbols and some (unexpected) applications	O. Pironneau S9.6 POD for complex black-scholes equations	R. Andreani S6.1 Constant positive generators: a new constraint qualification	C. Brezinski S11.2 André Louis Cholesky: family, life, and work
10:30–11:00	Y. Eidelman S10.3 Quasiseparable representations of matrices and discrete systems with boundary conditions	A. Quarteroni S9.7 Reliable reduced basis method for efficient geometrical parametrizations	J.M. Martinez S6.8 Remarks on constrained optimization	M.J. Gander S11.4 Euler, Lagrange, Ritz, Galerkin, Courant, Clough: on the road to the finite element method
11:00–11:30	COFFEE BREAK			
11:30–12:00	R. Vandebril S10.9 Chasing bulges or rotations? A new family of matrices admitting linear time QR-steps	O.B. Widlund S9.10 Domain decomposition algorithms for H(curl) problems	A.L. Custodio S6.3 Direct multiSearch: a new DFO approach for multiple objective functions	J.G. Dhombres S11.3 How to evaluate the historical and epistemological role of practical computing methods for the fundamental theorem of algebra
12:00–12:30	M. Van Barel S10.8 Orthogonal functions and matrix computations	M. Fornasier S9.4 Domain decomposition methods for total variation minimization	M. Siegle S6.9 Stochastic modelling techniques meet practical needs	N. Osada S11.6 The early history of convergence acceleration methods
12:30–13:00	B. Iannazzo S10.5 Means of structured matrices: properties, applications and algorithms	L. Gastaldi S9.5 Local mass conservation for the finite element immerse boundary method	U.M. Garcia-Palomares S6.5 Numerical tests on a new strategy for parallel derivative free optimization	J.L. Willis G66 Series acceleration through precise remainder asymptotics
13:00–16:00	LUNCH			
Chair	NAUTILUS: S5	CYPREA: S9	ALVANIA: R. D’AMBROSIO	OPALIA: U. KANGRO
16:00–16:30	B. Konopelchenko S5.5 Quasiclassical Da Rios system and gradient catastrophe for vortex filament motion	D. Boffi S9.1 Some remarks on eigenvalue approximation arising from partial differential equations	M.Á. Fortes G22 Multiresolution analysis for surfaces	E. Alaidarous G4 On an expansion method for inverting numerically a first kind Fredholm integral equation
16:30–17:00	M. Klaus S5.4 Spectral properties of the Lax operator for the matrix nonlinear Schrödinger system	C. Carstensen S9.2 A posteriori energy norm error estimation for 2nd-order partial differential equations	P. Lima G38 Numerical solution of the density profile equation for non-newtonian fluids	M. Basile G6 A numerical method for a nonlinear integro-differential boundary value problem
17:00–17:30	C. Schiebold S5.9 Recursion operators and hierarchies of noncommutative KdV-type equations	F. Rapetti S9.8 Dispersion analysis of spectral element methods on triangles for elastic wave propagation	R. Garrappa G26 Generalized exponential integrators for fractional differential equations	D. Conte G11 Collocation based numerical methods for Volterra integro-differential equations
17:30–18:00	COFFEE BREAK			
Chair	NAUTILUS: S5	CYPREA: S9	ALVANIA: J. WINKLER	OPALIA: M.R. CAPOBIANCO
18:00–18:30	F. Demontis S5.3 Exact solutions to the focusing discrete nonlinear Schrödinger equation	A. Veese S9.9 Sharp constant-free a posteriori error bounds for obstacle problems	K.Castillo G10 Szegő and para-orthogonal polynomials on the real line. Zeros and canonical spectral transformations	U. Kangro G30 Convergence of collocation method with delta functions for integral equations of first kind
18:30–19:00	C. van der Mee S5.10 Novel formulation of discrete integrable nonlinear Schrödinger equations	L. Formaggia S9.3 Numerical modelling for geoscience applications	C. Craviotto G13 Applications of PPC-fractions and Szegő polynomials to frequency analysis	S.P. Oliveira G48 Some remarks on the alternate trapezoidal quadrature method for Fredholm integral eigenvalue problems
19:00–19:30	T. Aktosun S5.1 Exact solutions to integrable nonlinear evolution equations	D. Martin G44 Minimization of functionals on the solution of a large-scale ill-posed problem	W. Themistoclakis G62 Polynomial approximation via discrete de la Vallée Poussin means	M. Van Daele G64 Adaptive Filon methods for the computation of highly oscillatory integrals
19:30	DINNER			

Wednesday 12th October

Chair:	NAUTILUS: O. Widlund							
9:00–10:00	M. Benzi Approximation of matrix functions arising in the analysis of complex networks							
Chair	NAUTILUS: S3		CYPREA: S1		ALVANIA: S8		OPALIA: P. SABLONNIÈRE	
10:00–10:30	R. Chan	S3.1	L.N. Trefethen	S1.9	A.I. Aptekarev	S8.1	F. Di Tommaso	G18
	A variational approach for exact histogram specification		Robust rational interpolation and least-squares		Strong asymptotics of Nuttall-Stahl polynomials		Complementary Lidstone interpolation on scattered data sets	
10:30–11:00	G. Steidl	S3.9	H.P. Blatt	S1.2	J. Gilewicz	S8.3	M.-L. Mazure	G45
	Quadrature errors, discrepancies and variational dithering		Growth and value distribution of rational approximants		Approximation of smooth functions by weighted means of N-point Padé approximants		Polynomial splines as examples of Chebyshevian splines	
11:00–11:30	COFFEE BREAK							
Chair	NAUTILUS: S3		CYPREA: S1		ALVANIA: S8		OPALIA: M.-L. MAZURE	
11:30–12:00	C. Estatico	S3.3	I.H. Sloan	S1.7	V.A. Kalyagin	S8.4	S. Remogna	G54
	Iterative regularization for nonlinear imaging in Banach spaces		Polynomial approximation on spheres - Generalizing de la Vallée Poussin		On vector continued fractions associated with Nikishin systems		Local bases for quadratic deficient spline spaces on criss-cross triangulations	
12:00–12:30	J. Nagy	S3.6	J.-P. Berrut	S1.1	L. Lorentzen	S8.6	P. Sablonnière	G57
	A nonlinear inverse problem in polyenergetic tomosynthesis image reconstruction		Applications of linear barycentric rational interpolation at equispaced nodes		Convergence of random continued fractions		Solving nonlinear equations using Hermite interpolation by polynomial or rational splines	
12:30–13:00	F. Sgallari	S3.7	W. Pleśniak	S1.5	M.A. Piñar	S8.8	O. Salazar Celis	G59
	Alternating Krylov subspace image restoration methods		Polynomial inequalities on subanalytic sets		Bernstein–Szegő polynomials on the triangle		Multivariate data fitting with error control	
13:00–14:00	LUNCH							
15:00	EXCURSIONS							
19:30	DINNER							

Thursday 13th October

Chair:	NAUTILUS: M. Gutknecht			
9:00–10:00	L. Reichel Rational Lanczos methods for the approximation of matrix functions			
Chair	NAUTILUS: S10	CYPREA: S2	ALVANIA: S6	OPALIA: S1
10:00–10:30	F.M. Dopico S10.2 Recovery of eigenvectors of matrix polynomials from generalized Fiedler linearizations	E.J. Weniger S2.8 Extensions of Padé-type approximants	C. Hammer S6.6 Modeling long-term impacts of the European Emission Trade System	G. Mastroianni S1.3 Weighted polynomial approximation
10:30–11:00	L. Gemignani S10.4 Efficient numerical methods for the polynomial spectral factorization	R. Borghi S2.1 Analysis of the convergence features of the δ transformation for a class of factorially diverging asymptotic series	N. Krejic S6.7 A line search method with variable sample size	D. Occorsio S1.4 Interlacing properties of generalized Laguerre zeros and some applications
11:00–11:30	COFFEE BREAK			
11:30–12:00	B. Beckermann S10.1 An error analysis for rational Galerkin projection applied to the Sylvester equation	X.-B. Hu S2.2 Pfaffian and its application to sequence transformations and corresponding convergence acceleration algorithms	S. Bellavia S6.2 Preconditioner updates for sequences of symmetric positive definite linear systems arising in optimization	M.G. Russo S1.6 Mean convergence of extended Lagrange interpolation on unbounded intervals
12:00–12:30	N. Mastronardi S10.6 Tracking the dominant subspace of indefinite matrices	M. Redivo-Zaglia S2.5 Multistep ε -algorithm and Shanks' transformation by Hirota's method	A. Friedlander S6.4 Bilevel optimization problems via inexact restoration	A. Sommariva S1.8 Computing Fekete and Lebesgue points: simplex, square, disk
12:30–13:00	M. Mitrouli G46 On the good pivots of Hadamard matrices and related issues	M. Iwasaki S2.3 Some aspects of the integrable discrete Lotka-Volterra system		W. Gautschi G27 Numerical integration over the square in the presence of algebraic/logarithmic singularities with an application to aerodynamics
13:00–14:00	LUNCH			
Chair	NAUTILUS: Z. STRAKOŠ	CYPREA: S2	ALVANIA: G. KULIKOV	OPALIA: G. MILOVANOVIĆ
16:00–16:30	A. Bouhamidi G8 Global Krylov subspace methods for computing the meshless elastic splines	C.N. Moore S2.4 Fourier series and acceleration methods	L. Aceto G2 A family of P-stable linear multistep methods for second order IVPs	M.R. Capobianco G9 Quadrature rules for singular integrals on unbounded intervals
16:30–17:00	V. Druskin G20 Optimal rational Krylov subspaces for large-scale dynamical systems	H. Safouhi S2.6 A comparative numerical study of extrapolation methods, sequence transformations and steepest descent methods in numerical integration	S. Amat G5 On a variational approximation of DAEs	G. Mantica G42 Computation of Jacobi matrices of uncountable systems of iterated functions and the solution of an inverse problem
17:00–17:30	J.E. Roman G56 Strategies for spectrum slicing based on restarted Lanczos methods	R. Varadhan S2.7 The remarkable effectiveness of a new class of extrapolation techniques for accelerating monotone algorithms in statistical modeling	B. Paternoster G50 General linear Nyström methods	M.S. Pranić G53 Rational Gauss quadrature
17:30–18:00	COFFEE BREAK			
18:00–19:30	POSTER SESSION			CYPREA: M. MITROULI
	A. Aimi , On the regularization of Galerkin BEM hypersingular bilinear forms	E. Leopold , Markov's theorem and perturbed recurrence relation	G. Ortenzi G49 Hamiltonian motion of algebraic curves	
	S. Belhaj , Approximate inversion of complex triangular Toeplitz matrices	A.V. Pejcev , Error bounds of Gauss-type quadratures with Bernstein-Szego weights	P. Fika G21 Extrapolation of operator moments, with applications to linear algebra problems	
	R. Cavoretto , Numerical integration on scattered data by Lobachevsky splines	P. Pintus , Modelling of ring resonators with magneto-optic materials using the finite element method	A. Karapiperi G31 Evaluation of minors for weighing matrices $W(n, n-1)$ having zeros on the diagonal	
	C. Fenu , Regularization techniques for the inversion of ground conductivity measurement	M.L. Rodriguez , Geometric design of a dam by variational spline approximation		
	E. Francomano , An implicit time domain meshless formulation for Maxwell's PDEs	M.R. Russo , Tikhonov regularization and matrix function evaluation		
	F. Lenti , Microwave radiometry product generation	F. Vitale , Dark-dark and dark-bright soliton interactions in the two-component defocusing nonlinear Schrödinger equation		
20:30	CONFERENCE GALA DINNER			

Friday 14th October

Chair:	NAUTILUS: G. Vainikko			
9:00–10:00	D. Bessis Universal analytic properties of noise			
Chair	NAUTILUS: S3	CYPREA: D. OCCORSIO	ALVANIA: S8	OPALIA: N. KREJIC
10:00–10:30	P. Mathé S3.5 Conjugate gradient iteration under white noise	L. Abbas G1 Landau-Kolmogorov type inequalities for the Hermite and closely connected measures	A. Matos S8.7 Smoothing the Gibbs phenomenon using Padé-Hermite approximants	D. Di Serafino G17 Scalable AMG preconditioners for PDE-constrained optimization problems
10:30–11:00	G. Vainikko S3.10 Cordial Volterra integral equations of the first kind	A.F. Loureiro G40 On nonorthogonal polynomials generated by classical forms	G. Labahn S8.5 Order bases: computation and uses in Computer Algebra	M.V. Kulikova G32 Array square-root approach for the maximum likelihood estimation via adaptive Kalman filtering methods
11:00–11:30	COFFEE BREAK			
Chair	NAUTILUS: S3	CYPREA: K. JBILOU	ALVANIA: S8	OPALIA: P. D'AMBRA
11:30–12:00	S. Siltanen S3.8 Electrical impedance imaging using nonlinear Fourier transform	A. Fukuda G24 An application of the integrable discrete hungry Toda equation to the eigenvalue computation	A. Cuyt S8.2 Symbolic-numeric integration, multivariate orthogonality and Padé approximation	E. Larsson G35 A radial basis function based partition of unity method for solving PDE problems
12:00–12:30	M. Donatelli S3.2 An iterative multigrid regularization method for Toeplitz discrete ill-posed problems	L. Laayouni G34 On the performance of the algebraic optimized Schwarz preconditioning methods	I. Yaman S8.10 Radially orthogonal multivariate basis functions	P.G. Martinsson G43 Fast direct solvers for elliptic PDEs
12:30–13:00	U. Hämarik S3.4 A family of rules for parameter choice in Tikhonov regularization of ill-posed problems with inexact noise level	E. Gallopoulos G25 On projection methods for estimating the diagonal of a matrix inverse	F. Wielonsky S8.9 Equilibrium problems for vector potentials	L. von Sydow G65 Adaptive, high-order methods to price options
13:00–14:00	LUNCH			
Chair	NAUTILUS: E. LARSSON	CYPREA: J. NAGY	ALVANIA: L. VON SYDOW	OPALIA: O. SALAZAR CELIS
16:00–16:30	F. Maggio G41 High-performance spectral-element simulation of cardiac electrical function using GPUs	B. Plestenjak G51 Numerical methods for nonlinear two-parameter eigenvalue problems	R. D'Ambrosio G15 Stability analysis of General Linear Nyström methods	A. Draux G19 Formal QD algorithm and Markov-Bernstein inequalities
16:30–17:00	P. Contu G12 Fast and effective numerical methods for 2D photonic crystals	M. Sedlacek G60 Data based regularization for discrete ill-posed problems	M.J. Rodrigues G55 A Tau method for nonlinear dynamical systems	J. Horáček G28 On the calculation of resonances by means of analytical continuation
17:00–17:30	P. D'Ambra G14 High-performance large eddy simulation of incompressible turbulent flows	S. Singer G61 Kogbetliantz-like method for hyperbolic SVD	G.Y. Kulikov G33 A new approach to control the global error of numerical methods for differential equations	W.-S. Lee G36 Multivariate Prony's method
17:30	CLOSING REMARKS			