



PROGRAM

Monday, July 7

8:30 Registration

9:45-10:00 The Opening

Plenary Talk

10:00-11:00 **E. Zuazua**
Control of Flows in the Presence of Shocks

11:00-11:30 Coffee Break

Parallel Sessions

Session A

Chairperson: A. Samartín

- 11:30-12:00 **I. Chudinovich**, C. Constanda
Bending of Thermoelastic Plates with Transmission Boundary Condition
- 12:00-12:30 **C. Constanda**, I. Chudinovich
Solution Estimates in Classical Bending of Plate
- 12:30-13:00 **P. Schiavone**, C-Q Ru
Integral Equation Methods in Plane-Strain Elasticity with Surface Stress

Session B

Chairperson: S. Seikkala

- 11:30-12:00 **V.V. Zozulya**
Regularization of the Divergent Integrals in Boundary Integral Equations
- 12:00-12:30 **L. Castro**, G. Bogveradze
Fredholm Characterization of Wiener-Hopf-Hankel Integral Operators with Piecewise Almost Periodic Symbols
- 12:30-13:00 **E. Rojas**, L. Castro
Singular Integral Operators with Flip Having Different Classes of Coefficients: Reduction and Fredholm Property

Session C

Chairperson: Y. Golovaty

- 11:30-12:00 **P.A. Krutitskii**
Harmonic Dirichlet Problem in a Planar Domain with Cracks: Existence of a Classical Solution and Non-Existence of a Weak Solution
- 12:00-12:30 **S.E. Mikhailov**, O. Chkadua, D. Natroshvili
Formulation and Analysis of Localized Boundary-Domain Integral
- 12:30-13:00 **E. Pérez**
Standing Waves from Quasimodes for Steklov Type Eigenvalue Problems

13:00-15:00 Lunch

Plenary Talk

15:00-16:00 **D. Cioranescu**
The Periodic Unfolding Method for the Homogenization in Domains with Holes

16:00-16:30 Coffee Break

Parallel Sessions

Session A

Chairperson: A. Piatnitski

- 16:30-17:00 **D. Blanchard**
A Few Models for the Junction of a Periodic Set of Beams and a Plate
- 17:00-17:30 **V. Chiadò Piat**, A.L. Piatnitski
Homogenization in Perforated Domains with Fourier Boundary Conditions
- 17:30-18:00 **P. Donato**
Homogenization and Correctors for a Class of Hyperbolic Equations with Imperfect Interface
- 18:00-18:30 **A. Amosov**, G. Panasenko
Homogenization of the Integro-Differential Burgers Equation
- 18:30-19:00 **G. Griso**
Fakir Carpet

Session B

Chairperson: P.J. Harris

- 16:30-17:00 **K. Ruotsalainen**, J. Kempainen
The Collocation Method for Boundary Integral Equation Related to the Time-Fractional Diffusion Equation
- 17:00-17:30 **C. Groetsch**, D. French
Numerical Solutions of a Class of Integral Equations Arising in a Biological Laboratory Procedure
- 17:30-18:00 **A. Cordero**, J.R. Torregrosa
Modified Newton's Methods for Systems of Nonlinear Equations
- 18:00-18:30 **D. Chappell**
Convolution Quadrature Galerkin Method for the Exterior Neumann Problem of the Wave Equation
- 18:30-19:00 **V. Domínguez**, N. Heuer, F.J. Sayas
Galerkin Methods for Boundary Integral Equations on Axisymmetric Domains

Session C

Chairperson: P. Schiavone

- 16:30-17:00 **L.J. Álvarez-Vázquez**, F.J. Fernández, R. Muñoz-Sola
A Three-Dimensional Eutrophication Model: Analysis and Control
- 17:00-17:30 **H.F. de Campos Velho**, F.F. Paes, S. Stephany, R.P. Souto, P.O.A. Navaux, A.S. Charao
3D Tomography of Ocean Chlorophyll Applying Grid Computing
- 17:30-18:00 **M. Azreg-Aïnou**
Solving a Class of Non-Linear Matrix Differential Equations with Application to General Relativity
- 18:00-18:30 **A.V. Gusarov**, I. Smurov
Homogenized Models of Radiation Transfer in Multiphase Media
- 18:30-19:00 **S.M. Haidar**
On J. Ball's Fundamental Existence Theory and Weak Equilibria in Radial Hyperelasticity
- 20.30 Reception
Ayuntamiento (Town Hall)

Tuesday, July 8

Plenary Talk

9:00-10:00 **B. Engquist**
Directional Fast Multipole Methods for Wave Scattering

10:00-10:30 Coffee Break

Parallel Sessions

Session A

Chairperson: P. Donato

10:30-11:00 **A. Piatnitski**
Averaging of Evolution Equations with Large Low Order Terms

11:00-11:30 **A. Gaudiello**, D. Blanchard, T.A. Mel'nyk
Boundary Homogenization and Reduction of Dimension in a Kirchhoff-Love Plate

11:30-12:00 **T.A. Shaposhnikova**
On Boundary Homogenization of Variational Inequalities

12:00-12:30 **A.O. Hammouda**
Periodic Unfolding for Neumann Problems in Perforated Domains

12:30-13:00 **R. Orive**
Bloch Decomposition, Asymptotic Expansions and Applications

Session B

Chairperson: M. Ahues

10:30-11:00 **R.P. Kulkarni**
A Two-Grid Method for a Second Kind Integral Equation with Green's Kernel

11:00-11:30 **R. Fernandes**, M. Ahues, F.D. D'Almeida
Error Bounds for L_1 Galerkin Approximations of Weakly Singular Integral Operators

11:30-12:00 **A. Pedas**, T. Diogo, M. Kolk, P. Lima
High Order Methods for Weakly Singular Volterra Integro-Differential Equations

12:00-12:30 **A. Samartín**, J. Cardona, P. Tabuenca
A Numerical Solution of the Dispersion Equation of the Guided Wave Propagation in N-Layered Media

12:30-13:00 **V. Sevroglou**, C.E. Athanasiadis, I.G. Stratis
Dyadic Elastic Scattering by Point Sources: Direct and Inverse Problems

Session C

Chairperson: C. Constanda

10:30-11:00 **T. Qian**
Boundary Derivative of Nevanlinna Function with Applications

11:00-11:30 **J. Roca-González**, A. Guillamón, J. Roca-Dorda, M.C. Ruiz, J.A. Álvarez, R.J. Alcaraz
Monitoring General Anesthesia Using Havrda-Charvat's Permutation Entropy

11:30-12:00 **I.M. Tkachenko**, J. Alcober, M. Urrea
Construction of Solutions of the Hamburger-Löwner Mixed Interpolation Problem for the Nevanlinna-Class Functions

12:00-12:30 **V. Kotila**, S. Lahdelma, K. Ruotsalainen
Wavelet-Based Hölder-Regularity Analysis in Condition Monitoring

12:30-13:00 **S. Chergui**
*The Torsional Natural Frequencies and Mode Shapes of Drill String /
The Torsional Forced Vibrations of Drill String*

13:00-15:00 Lunch

Plenary Talk

15:00-16:00 **C. Lovadina**
An Overview of Finite Element Schemes for Plate Problems

16:00-16:30 Coffee Break

Parallel Sessions

Session A

Chairperson: C. Lovadina

- 16:30-17:00 **J. Steinhoff**, S. Chitta
Long Range Numerical Simulation of Short Waves as Nonlinear Solitary Waves
- 17:00-17:30 **C. Castro**, E. Zuazua
Numerical Approximation of the Flux Identification Problem for a Scalar Conservation Law
- 17:30-18:00 **A. Largillier**
A Numerical Method for a Quasilinear Hyperbolic Problem
- 18:00-18:30 **M. Mokgolele**, S. Langdon, S.N. Chandler-Wilde
High Frequency Scattering by Convex Curvilinear Polygons
- 18:30-19:00 **J.M. González-Vida**, M.J. Castro, E.D. Fernández-Nieto, A. Mangeney, C. Parés
A New Savage-Hutter Type Model for Submarine Avalanches and Generated Tsunamis

Session B

Chairperson: A. Nastase

- 16:30-17:00 **B.E.J. Bodmann**, I.R. Heinen, M.T.M.B. de Vilhena
An Analytical Solution for the General Perturbative Diffusion Equation by Integral Transform Techniques
- 17:00-17:30 **D. Buske**, M.T. Vilhena, D.M. Moreira, T. Tirabassi
An Analytical Solution for the Transient Two-Dimensional Advection-Diffusion Equation with Non-Fickian Closure in Cartesian Geometry by Integral Transform Technique
- 17:30-18:00 **C.P. da Costa**, M.T. Vilhena, T. Tirabassi
A Closed-Formulation for the Pollutant Dispersion in Atmosphere
- 18:00-18:30 **T.M. Zaboronkova**, A.V. Kudrin, E.Yu. Petrov
Integral Equation Technique for Finding the Current Distribution of Loop Antenna in Gyrotropic Medium
- 18:30-19:00 **A.V. Kudrin**, V.A. Es'kin, E.Yu. Petrov, T.M. Zaboronkova
Using the Eigenfunction Expansion Technique for Analysis of Antenna Fields in Cylindrically Stratified Anisotropic and Gyrotropic Media

Session C

Chairperson: K. Ruotsalainen

- 16:30-17:00 **J. Kemppainen**, K. Ruotsalainen
Boundary Integral Solution of Time-Fractional Diffusion Equation
- 17:00-17:30 **D. Mitrea**
Properties of Green Functions for Elliptic Systems
- 17:30-18:00 **M. Mitrea**
Boundary Layer Methods for the Stokes System in Lipschitz Domains
- 18:00-18:30 **V.B. Vasilyev**
Asymptotic Behavior of Solution of Elliptic Pseudodifferential Equation near Cone
- 18:30-19:00 **T.G. Ayele**, S.E. Mikhailov
Analysis of Two-Operator Boundary-Domain Integral Equations
- 19:00 Meeting of the Steering Committee

Wednesday, July 9

Plenary Talk

9:00-10:00 **E. Sanchez-Palencia**
Integral Approach to Sensitive Singular Perturbations

10:00-10:30 Coffee Break

Parallel Sessions

Session A

Chairperson: C. Castro

10:30-11:00 **C.F. Jerez-Hanckes**, J-C. Nédélec
Hybrid Galerkin Method for Elliptic and Wave Propagation Problems in R^3 Over Planar Structures

11:00-11:30 **P.J. Harris**, C Hardwidge
A Porous Finite Element Model of the Motion of the Spinal Cord

11:30-12:00 **M. Luna-Laynez**, J. Casado-Díaz, J. Couce-Calvo, J.D. Martín Gómez
Numerical Results for Control Problems in the Coefficients with a Nonlinear Cost in the Gradient

12:00-12:30 **L. Smaranda**, C. Conca, J. San Martín, M. Vanninathan
On Burnett Coefficients in Periodic Media

12:30-13:00 **M. El Jarroudi**, A. Brillard
Fractal Relaxed Problems in Elasticity

Session B

Chairperson: I. Chudinovich

10:30-11:00 **D. Natroshvili**, O. Chkadua
Stress Singularity Analysis for Piezoelectric-Metallic Composite Structures

11:00-11:30 **M. Betoue Etoughe**, G. Panasenko
Partial Homogenization of Discrete Models

11:30-12:00 **L. Sudak**
An Edge Dislocation Interacting with an Isotropic Bimaterial Interface

12:00-12:30 **S. Potapenko**
Variational treatment of crack problems in plane micropolar elasticity

12:30-13:00 **V.V. Kolybasova**, P.A. Krutitskii
Integral Equation Method in a Problem on Acoustic Scattering by a thin Cylindrical Screen with Dirichlet and Impedance Boundary Conditions on Opposite Sides of the Screen

Session C

Chairperson: D. Mitrea

10:30-11:00 **A. Nastase**
Influence of a Weak Interaction Aerodynamic/Structure over Aerodynamical Global Shape's Optimization

11:00-11:30 **R.C. Barros**, C.Z. Petersen, M.T. Vilhena, D.M. Moreira
The Laplace Transform Method for the Albedo Boundary Conditions in Neutron Diffusion Eigenvalue Problems

11:30-12:00 **K. Yunt**
Internal Boundary Variations and Discontinuous Transversality Conditions in Impact Mechanic

12:00-12:30 **V. Varin**
Computation of Non-Local Degeneracies in ODEs

12:30-13:00 **L. Simon**
On Qualitative Properties of Solutions to Parabolic Functional Differential Equations

13:00-19:00 Excursion

21:00 Banquet

Thursday, July 10

Plenary Talks

- 9:30-10:15 **B. Vainberg**
Propagation of Waves in Networks of Thin Fibers and Slowing Down of the Light
- 10:15-11:00 **F. Verhulst**
Invariant Manifolds and Bifurcations in Wave Equations
- 11:00-11:30 Coffee Break

Parallel Sessions

Session A

Chairperson: C. Cioranescu

- 11:30-12:00 **Y. Golovaty**, S. Man'ko
On the Schrödinger Operator with δ' -Interaction
- 12:00-12:30 **M.V. Perel**, M.S. Sidorenko, E.A. Gorodnitskiy
Multiscale Investigation of the Solution of the Wave Equation
- 12:30-13:00 **D. Torrent**, J. Sánchez-Dehesa
Homogenization of Sonic Crystals by Multiple Scattering Theory

Session B

Chairperson: S.E. Mikhailov

- 11:30-12:00 **N. Khativshvili**
On a Conformal Mapping Method for the Helmholtz Equation
- 12:00-12:30 **A. Silva**, L. Castro
Fredholm Property of Wiener-Hopf Plus/Minus Hankel Operators with Different Semi-Almost Periodic Symbols
- 12:30-13:00 **A. Ramos**, L. Castro
Hyers-Ulam-Rassias Stability for a Class of Nonlinear Volterra Integral Equations

Session C

Chairperson: S. Potapenko

- 11:30-12:00 **H. Hirayama**
Solving Higher Index Differential Algebraic Equation by Taylor Series
- 12:00-12:30 **S. Seikkala**, S. Heikkilä
Existence Results for Extremal Solutions of Singular Functional Cauchy and Cauchy-Nicoletti Problems
- 12:30-13:00 **M. Belmekki**, F. Haddouchi, M. Kameche
Unidimensional Model Study of Dispersion by Diffusion of a Pollutant
- 13:00-15:00 Lunch

Plenary Talk

15:00-16:00 **R. Gadyl'shin**
On Regular and Singular Perturbations of Eigenvalues of Laplacian

16:00-16:30 Coffee Break

Parallel Sessions

Session A

Chairperson: R. Gadyl'shin

- 16:30-17:00 **J.M. Arrieta**
Eigenvalue Problems and Nonlinear Equations in Dumbbell Domains
- 17:00-17:30 **N. Babych**
Double Contrasts in Periodic Spectral Problems
- 17:30-18:00 **D. Gómez**, M. Lobo, E. Pérez
Vibrating Systems with Concentrated Masses along Planes
- 18:00-18:30 **P.D. Lamberti**, V.I. Burenkov
Stability Estimates for the Eigenvalues of Higher Order Elliptic Operators on Variable Domains
- 18:30-19:00 **T. Mel'nyk**
Asymptotic Analysis of Spectral Problem in Thick Multi-Level Junctions

Session B

Chairperson: A. Largillier

- 16:30-17:00 **L. Grammont**, R. Kulkarni
A Fast Solver of Integral Equation Based on a New Projection Method
- 17:00-17:30 **P.B. Vasconcelos**, O. Marques, J.E. Roman
High-Performance Computing for Spectral Approximations
- 17:30-18:00 **A. Correia**, J. Matias, C. Serôdio
Exact Penalty Methods
- 18:00-18:30 **B.D.A. Rodriguez**, M.T. Vilhena
Solution of the Fokker-Planck Pencil Beam Equation for Electron by the Laplace Transform Technique
- 18:30-19:00 **A. Petrov**, V. Zhuravlev
Simple Algorithm of Computation of Hamiltonian Normal Form
- 19:00 The Closure