The Czechoslovak International Conference on
Differential Equations and Their Applications
**EQUADIFF 10,**
**Prague, August 27–31, 2001**

## Room No. 100
## Monday, August 27

**Plenary lectures**

Chair: K. Segeth

| | | |
|---|---|---|
| $9^{45}$–$10^{35}$ | **I. Babuška** (Univ. of Texas at Austin) | *Verification and validation in computational mechanics. Some mathematical aspects* |

## Room No. 100
## Monday, August 27

**Plenary lectures**

Chair: J. Jarník

| | | |
|---|---|---|
| $11^{10}$–$12^{00}$ | **Z. Artstein** (Weizmann Inst., Rehovot) | *Averaging, invariant measures and singular perturbations* |

## Room No. 101
## Monday, August 27

**Invited lectures**

### Ordinary Differential Equations

Chair: Z. Artstein

| | | |
|---|---|---|
| $14^{00}$–$14^{30}$ | **A. Lomtatidze** (Math. Inst. Acad. Sci., Brno) | *On Cauchy problem for functional differential equations* |
| $14^{35}$–$15^{05}$ | **S. A. Mazanik** (Belarus State Univ., Minsk) | *Lappo-Danilevski system* |

# Room No. 101
# Monday, August 27

**Short Communications**

## Ordinary Differential Equations

Chair: N. Koksch

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **M. Grossinho** (Univ. Técnica de Lisboa) | *Upper and lower solutions for some higher order boundary value problems* |
| $16^{00}$–$16^{15}$ | **L. Jüttner** (Palacký Univ., Olomouc) | *On the lower/uppper solutions technique for multivalued boundary value problems* |
| $16^{20}$–$16^{35}$ | **M. Kečkemétyová** (Slovak Univ. of Technology in Bratislava) | *Properties of the set of solutions for nonlinear boundary value problem* |
| $16^{40}$–$16^{55}$ | **M. Tvrdý** (Math. Inst. Acad. Sci., Prague) | *Some periodic boundary value problems with singularities* |
| $17^{00}$–$17^{15}$ | **B. Przeradzki** (Univ. of Łódź) | *A nonlocal boundary value problem for pendulum-like equation* |
| $17^{20}$–$17^{35}$ | **F. Sadyrbaev** (Univ. of Latvia, Riga) | *Nonlinear singular eigenvalue problems for second order equations* |

## Room No. 304
## Monday, August 27

**Short Communications**

### Ordinary Differential Equations

Chair: O. Došlý

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **B. Rudolf** (Slovak Univ. of Technology in Bratislava) | *On a generalized boundary value problem* |
| $16^{00}$–$16^{15}$ | **P. Vodstrčil** (Masaryk Univ., Brno) | *On a three-point boundary value problem for second order linear functional differential equations* |
| $16^{20}$–$16^{35}$ | **Y. Yakubov** (Tel-Aviv Univ.) | *Irregular boundary value problems for ordinary differential equations* |
| $16^{40}$–$16^{55}$ | **M. Zima** (Pedagogic. Univ., Rzeszów) | *On positive solutions of second order boundary value problems on the half-line* |
| $17^{00}$–$17^{15}$ | **J. Baštinec** (Univ. of Technology, Brno) | *Asymptotic behaviour of solutions of linear discrete equations* |
| $17^{20}$–$17^{35}$ | **Z. Došlá** (Masaryk Univ., Brno) | *On quasilinear differential and difference equations* |

# Room No. 303
# Monday, August 27

## Short Communications

### Ordinary Differential Equations

Chair: J. Jaroš

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **J. Andres** (Palacký Univ., Olomouc) | *Bounded solutions of differential systems sequential vs direct approaches* |
| $16^{00}$–$16^{15}$ | **F. Battelli** (Univ. of Ancona) | *Using residues to compute the Melnikov function* |
| $16^{20}$–$16^{35}$ | **G. R. Belitskii** (Ben-Gurion Univ. of the Negev, Beer-Sheva) | *Sternberg-Chen theorem for equivariant Hamiltonian vector fields* |
| $16^{40}$–$16^{55}$ | **D. Bonheure** (Universite Catholic de Lovain, Lovain-La-Neuve) | *On a class of forced nonlinear oscillators at resonance* |
| $17^{00}$–$17^{15}$ | **G. Farkas** (Univ. of Appl. Sciences, Győr) | *Invariant foliations under numerics* |
| $17^{20}$–$17^{35}$ | **J. L. Flores** (Univ. of Granada) | *Topological technic for the geodesic connectedness of some Lorentzian manifolds* |

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## Room No. 347
## Monday, August 27

**Short Communications**

**Partial Differential Equations**

Chair: J. Stará

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **J. A. Esquivel-Avila** (Universidad Autonoma Metropolitana, Azcapotzalco) | *A nonlinear dissipative wave equation* |
| $16^{00}$–$16^{15}$ | **M. Fečkan** (Komenský Univ., Bratislava) | *Forced vibrations of abstract undamped wave equations* |
| $16^{20}$–$16^{35}$ | **I. V. Andrianov** (Pridneprovye State Acad., Dnepropetrovsk) | *Asymptotic method for nonlinear periodical vibrations of continuous structures* |
| $16^{40}$–$16^{55}$ | **H. Uesaka** (Nihon Univ., Tokyo) | *Oscillation property for semilinear wave equations* |
| $17^{00}$–$17^{15}$ | **J. Härterich** (Free Univ., Berlin) | *On the asymptotic behaviour of conservation laws with degenerate source terms* |
| $17^{20}$–$17^{35}$ | **S. Liebscher** (Free Univ. Berlin) | *Oscillatory profiles of balance laws near bifurcations along manifolds of equilibria* |

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# Room No. 120
## Monday, August 27

**Invited lectures**

**Partial Differential Equations**

Chair: W. Jäger

| | | |
|---|---|---|
| $14^{00}$–$14^{30}$ | **B. Fiedler** (Free Univ. Berlin) | *Quantitative homogenization* |
| $14^{35}$–$15^{05}$ | **P. Poláčik** (Komenský Univ., Bratislava) | *Center manifolds in the study of parabolic PDE's* |

# Room No. 120
# Monday, August 27

**Short Communications**

**Partial Differential Equations**

Chair: A. Szulkin

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **M. Grobbelaar** (Univ. of Pretoria) | *Stability of a thermo-elastic plate-beam structure* |
| $16^{00}$–$16^{15}$ | **V. Reitmann** (Max-Planck-Institut für Physik, Dresden) | *Plastic wrinkling and flutter in sheet metal spinning* |
| $16^{20}$–$16^{35}$ | **T. Roubíček** (Charles Univ., Prague) | *Certain variational inequality in a plasticity model for shape-memory alloys* |
| $16^{40}$–$16^{55}$ | **L. Pisani** (Univ. Di Bari) | *Topological solitons and Born-Infeld type electromagnetic field* |
| $17^{00}$–$17^{15}$ | **J. Franců** (Univ. of Technology, Brno) | *Homogenization of heat equation with hysteresis* |
| $17^{20}$–$17^{35}$ | **M. Ďurikovičová** (Slovak Univ. of Technology in Bratislava) | *Topological properties of nonlinear evolution equations* |

## Room No. 310
## Monday, August 27

**Short Communications**

### Partial Differential Equations

Chair: M. Růžička

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **M. Grinfeld** (Univ. of Strathclyde, Glasgow) | *Memory driven instability in a diffusion process* |
| $16^{00}$–$16^{15}$ | **P. Šolín** (Inst. Electric. Engineering Acad. Sci., Prague) | *Non-uniqueness of solution to quasi-1D compressible Euler equations* |
| $16^{20}$–$16^{35}$ | **S. Omata** (Kanazawa Univ.) | *A numerical treatment of thin film movement with free boundary* |
| $16^{40}$–$16^{55}$ | **Y. A. Skiba** (Nat. Autonomous Univ. of Mexico) | *On the stability of the Rossby-Haurwitz wave* |
| $17^{00}$–$17^{15}$ | **A. Labianca** (Univ. de Bari) | *A global stability theorem in a system of P.D.E.s for anisotropic hydromagnetic flows* |
| $17^{20}$–$17^{35}$ | **M. Guzmán-Gómez** (Universidad Autónoma Metropolitana Azcapotzalco, Mexico D.F.) | *Non existence of travelling wave solutions for a Davey-Stewartson system* |

# Room No. 319
## Monday, August 27

**Invited lectures**

### Numerical Methods

Chair: L. Tobiska

| | | |
|---|---|---|
| $14^{00}$–$14^{30}$ | **B. Franchi** (Univ. of Bologna) | *Rectifiability in the Heisenberg group* (∗) |
| $14^{35}$–$15^{05}$ | **M. Dauge** (Univ. de Rennes) | *Shell theory: Koiter estimates revisited* |

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## Room No. 319
## Monday, August 27

**Short Communications**

**Numerical Methods**

Chair: I. Bock

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **P. Burda** (Czech Technical Univ., Prague) | *A posteriori error estimates and adaptive mesh refinement applied to flow in a channel with corners* |
| $16^{00}$–$16^{15}$ | **L. Angermann** (Otto-von-Guericke-Univ. Magdeburg) | *Node-centered finite volume schemes and nonconforming mixed FEM* |
| $16^{20}$–$16^{35}$ | **Z. Pospíšil** (Masaryk Univ., Brno) | *Logistic equation on time scales* |
| $16^{40}$–$16^{55}$ | **Y. Ashida** (Graduate School of Engineering, Yoshida-honmachi) | *The ultrasonic motor based on a longitudinal vibration of a cantilever* |
| $17^{00}$–$17^{15}$ | **N. Reguera** (Univ. of Burgos) | *Error analysis of absorbing boundary conditions for a spatial discretization of Schrödinger-type equations* |
| $17^{20}$–$17^{35}$ | **Z. Uzelac** (Univ. of Novi Sad) | *Quadratic spline difference schemes for singular perturbation problems of convection-diffusion type* |

## Room No. 100
## Tuesday, August 28

**Plenary lectures**

Chair: I. Babuška

| | | |
|---|---|---|
| $8^{50}$– $9^{40}$ | **M. Feistauer** (Charles Univ., Prague) | *Discontinuous Galerkin methods for convection-diffusion problems* |
| $9^{45}$–$10^{35}$ | **W. Hackbusch** (Max Planck Inst., Leipzig) | *Hierarchical matrices* |

## Room No. 100
## Tuesday, August 28

**Plenary lectures**

Chair: O. John

| | | |
|---|---|---|
| $11^{10}$–$12^{00}$ | **W. Jäger**<br>(Univ. of Heidelberg) | *Navier-Stokes flow at interfaces and rough boundaries* |

# Room No. 304
## Tuesday, August 28

**Short Communications**

### Ordinary Differential Equations

Chair: M. Medveď

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **B. Buffoni** (Swiss Federal Inst. of Technology, Lausanne) | *Homoclinic orbits in Hamiltonian systems as intersection points of two Lagrangian manifolds* |
| $16^{00}$–$16^{15}$ | **M. Švec** (Komenský Univ., Bratislava) | *Some remarks about the boundary value problems* |
| $16^{20}$–$16^{35}$ | **J. Klaus** (Techn. Univ., Ilmenau) | *Bifurcations of homoclinic orbits to a saddle-center for reversible systems* |
| $16^{40}$–$16^{55}$ | **M.-C. Ciocci** (Univ. of Gent) | *Normal form and bifurcation of periodic points in reversible mappings* |
| $17^{00}$–$17^{15}$ | **J. Knežević-Miljanović** (Univ. of Belgrade) | *Asymptotic properties of nonlinear differential equation* |
| $17^{20}$–$17^{35}$ | **N. Koksch** (Techn. Univ. Dresden) | *Inertial manifolds for nonautonomous dynamical systems* |
| $17^{40}$–$17^{55}$ | **R. Ramirez** (Univ. Rovira i Virgili, Tarragena) | *Dynamics of the system with constraints* |

## Room No. 101
## Tuesday, August 28

**Invited lectures**

**Ordinary Differential Equations**

Chair: S. A. Mazanik

| | | |
|---|---|---|
| $14^{00}$–$14^{30}$ | **M. Pituk**<br>(Univ. of Veszprém) | *Convergence to equilibria in a differential equation with small delay* |
| $14^{35}$–$15^{05}$ | **Y. Yi**<br>(Nat. Univ. of Singapore) | *Effective stability of generalized Hamiltonian systems* |

# Room No. 101
# Tuesday, August 28

**Short Communications**

**Ordinary Differential Equations**

Chair: M. Pituk

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **A. Augustynowicz** (Gdańsk Univ.) | *On some ordinary differential equations with advanced argument* |
| $16^{00}$–$16^{15}$ | **L. Berezansky** (Ben-Gurion Univ. of the Negev, Beer-Sheva) | *Some oscillation properties of a linear neutral differential equation* |
| $16^{20}$–$16^{35}$ | **M. Cavani** (Universidad de Oriente) | *Distributed delayed competing predators* |
| $16^{40}$–$16^{55}$ | **J. Čermák** (Univ. of Technology, Brno) | *The asymptotic properties of solutions of a class of delay differential equations* |
| $17^{00}$–$17^{15}$ | **J. Diblík** (Univ. of Technology, Brno) | *Positive and oscillating solutions of equation* $\dot{x}(t) = -c(t)x(t-\tau)$ |
| $17^{20}$–$17^{35}$ | **F. Hartung** (Univ. of Veszprém) | *Asymptotic stability of functional differential equations with state-dependent delays* |

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# Room No. 347
# Tuesday, August 28

## Short Communications

### Partial Differential Equations

Chair: D. Apushkinskaya

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **L. Recke** (Humboldt Univ. of Berlin) | *Applications of the implicit function theorem to elliptic boundary value problems with non-smooth data* |
| $16^{00}$–$16^{15}$ | **J. Bouchala** (Technical Univ. of Ostrava) | *Landesman-Lazer type conditions and quasilinear elliptic equations* |
| $16^{20}$–$16^{35}$ | **J. Sanz** (Univ. de Valladolid) | *Convergence, via summability, of formal power series solutions to a certain class of completely integrable Pfaffian systems* |
| $16^{40}$–$16^{55}$ | **J. Hegedűs** (Univ. of Szeged) | *On the radially symmetric solutions of a class of nonlinear, nonlocal elliptic problems* |
| $17^{00}$–$17^{15}$ | **N. Hirano** (Yokohama Nat. Univ.) | *Multiplicity of solutions for nonhomogeneous nonlinear elliptic equations with critical exponents* |
| $17^{20}$–$17^{35}$ | **D. Medková** (Math. Inst. Acad. Sci., Prague) | *Continuously extendible solutions of the Robin problem for the Laplace equation* |

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# Room No. 303
# Tuesday, August 28

**Short Communications**

## Partial Differential Equations

Chair: E. Feireisl

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **K. Asano** (Kyoto Univ.) | *Boundary layer associated with the Navier-Stokes flow past a ball* |
| $16^{00}$–$16^{15}$ | **J. Stará** (Charles Univ., Prague) | *Existence of smooth flows for a class of non Newtonian fluids in plane* |
| $16^{20}$–$16^{35}$ | **T. Nagasawa** (Tôhoku Univ., Sendai) | *A missing term in the energy inequality for weak solutions to the Navier-Stokes equations* |
| $16^{40}$–$16^{55}$ | **M. Růžička** (Univ. of Freiburg) | *On electrorheological fluids* |
| $17^{00}$–$17^{15}$ | **Š. Nečasová** (Math. Inst. Acad. Sci., Prague) | *Asymptotic properties of the steady fall of a body in a viscous liquid* |
| $17^{20}$–$17^{35}$ | **M. Pokorný** (Charles University, Prague) | *Regularity criterion for smoothness of axisymmetric Navier-Stokes equations* |

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## Room No. 120
## Tuesday, August 28

**Invited lectures**

### Partial Differential Equations

Chair: W. Wendland

| | | |
|---|---|---|
| $14^{00}$–$14^{30}$ | **A. Ambrosetti** (Scuola Intern. Sup. di Studi Avanzati, Trieste) | *On an elliptic problem arising in differential geometry* |
| $14^{35}$–$15^{05}$ | **F. Flandoli** (Univ. di Pisa) | *On the singularities of solutions to stochastic Navier-Stokes equations* |

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## Room No. 120
## Tuesday, August 28

**Short Communications**

### Partial Differential Equations

Chair: P. Poláčik

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **J. Filo**<br>(Komenský Univ., Bratislava) | *Homogenization of a boundary condition for the heat equation* |
| $16^{00}$–$16^{15}$ | **A. W. Turski**<br>(Silesian Univ., Katowice) | *Asymptotics of pseudodifferential parabolic equations* |
| $16^{20}$–$16^{35}$ | **A. Nazarov**<br>(St. Petersburg State Univ.) | $L_p$*-estimates for solutions of Dirichlet and Neumann problems to heat equation in the wedge of arbitrary codimension* |
| $16^{40}$–$16^{55}$ | **O. John**<br>(Charles Univ., Prague) | *Non-regularity of parabolic systems with bounded and measurable coefficients* |
| $17^{00}$–$17^{15}$ | **U. Raitums**<br>(Univ. of Latvia, Riga) | *Relaxation of quasilinear elliptic systems via A-quasiconvex envelopes* |
| $17^{20}$–$17^{35}$ | **M. Winkler**<br>(Aachen Univ. of Technology) | *A critical exponent in a degenerate parabolic equation* |

# Room No. 319
# Tuesday, August 28

**Invited lectures**

## Numerical Methods

Chair: K. Segeth

| | | |
|---|---|---|
| $14^{00}$–$14^{30}$ | **A. Quarteroni** (École Polytech. Fédérale de Lausanne) | *Mathematical and numerical models in multiphysics* |
| $14^{35}$–$15^{05}$ | **L. Tobiska** (Otto-von-Guericke-Univ. Magdeburg) | *Stabilised finite element approximations for the incompressible Navier-Stokes equations* |

## Room No. 319
## Tuesday, August 28

**Short Communications**

### Numerical Methods

Chair: I. Hlaváček

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **I. Bock** (Slovak Univ. of Technology in Bratislava) | *On integro-differential von Kármán system for vicsoelastic plates* |
| $16^{00}$–$16^{15}$ | **J. Chleboun** (Math. Inst. Acad. Sci., Prague) | *Effects of uncertainties in the domain on the solution of Neumann and Dirichlet boundary value problems* |
| $16^{20}$–$16^{35}$ | **V. Chalupecký** (Czech Techn. Univ., Prague) | *Image processing by means of parabolic differential equations of Allen-Cahn type* |
| $16^{40}$–$16^{55}$ | **A. Demlow** (Cornell Univ., Ithaca) | *Sharply localized $L_\infty$-estimates for mixed finite element methods* |
| $17^{00}$–$17^{15}$ | **J. Vala** (Univ. of Technology, Brno) | *Two-scale convergence with respect to measures in continuum mechanics* |
| $17^{20}$–$17^{35}$ | **M. Vohralík** (Czech Techn. Univ., Prague) | *Mixed-hybrid model of the fracture flow* |

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# Room No. 303
## Wednesday, August 29

**Short Communications**

### Ordinary Differential Equations

Chair: A. Lomtatidze

| | | |
|---|---|---|
| $10^{30}$–$10^{45}$ | **E. Liz** (Universidad de Vigo, Vigo) | *On some extensions of 3/2-stability conditions by Wright and Yorke* |
| $10^{50}$–$11^{05}$ | **J. Marín** (Universidad de Oriente, Cumaná) | *A class of competing models with discrete delays* |
| $11^{10}$–$11^{25}$ | **W. Kratz** (Univ. of Ulm) | *Oscillation of differential and difference systems* |
| $11^{30}$–$11^{45}$ | **R. Hakl** (Math. Inst. Acad. Sci., Brno) | *Some boundary value problems for FDE of non-Volterra's type* |
| $11^{50}$–$12^{05}$ | **S. H. Saker** (A. Mickiewicz Univ., Poznań) | *Oscillation of second order neutral delay differential equations with variable coefficients* |

## Room No. 101
## Wednesday, August 29

**Invited lectures**

### Partial Differential Equations

Chair: Y. Yi

| | | |
|---|---|---|
| $8^{50}$– $9^{20}$ | **T. Kilpeläinen** (Univ. of Jyväskylä) | *Problems involving p-Laplacian type equations and measures* |

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**Invited lectures**

### Ordinary Differential Equations

Chair: Y. Yi

| | | |
|---|---|---|
| $9^{25}$– $9^{55}$ | **J. Tabor** (Jagiellonian Univ., Kraków) | *Differential equations in metric spaces* |

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## Room No. 101
## Wednesday, August 29

**Short Communications**

**Ordinary Differential Equations**

Chair: S. Schwabik

| | | |
|---|---|---|
| $10^{30}$–$10^{45}$ | **V. Tkachenko** (Ben-Gurion Univ. of the Negev, Beer-Sheva) | *1-D periodic differential operators of order 4* |
| $10^{50}$–$11^{05}$ | **A. Domoshnitsky** (Research Inst., Ariel) | *Asymptotic properties of integro-differential equations* |
| $11^{10}$–$11^{25}$ | **Ya. M. Goltser** (College of Judea and Samaria, Jerusalem) | *Floquet-Lyapunov theorems for integro-differential equations* |
| $11^{30}$–$11^{45}$ | **M. Kwapisz** (Bydgoszcz Academy) | *On general differential-algebraic and integro-algebraic systems* |
| $11^{50}$–$12^{05}$ | **M. Medveď** (Komenský Univ., Bratislava) | *Nonlinear integral and difference inequalities with singular kernels* |

# Room No. 304
# Wednesday, August 29

**Short Communications**

## Ordinary Differential Equations

Chair: J. Andres

| | | |
|---|---|---|
| $10^{30}$–$10^{45}$ | **J. Džurina** (P. J. Šafárik Univ. in Košice) | *Oscillation criteria for second order nonlinear retarded differential equations* |
| $10^{50}$–$11^{05}$ | **L. Gorniewicz** (Univ. of Nicholas Copernicus, Toruń) | *Periodic points and applications to ODE's* |
| $11^{10}$–$11^{25}$ | **J. Ohriska** (P. J. Šafárik Univ. in Košice) | *Oscillation in noncanonical second order linear differential equations* |
| $11^{30}$–$11^{45}$ | **Z. Opluštil** (Masaryk Univ., Brno) | *On oscillation and nonoscillation criteria for a two-dimensional system of first order nonlinear difference equations* |
| $11^{50}$–$12^{05}$ | **V. Taddei** (Univ. of Modena & Reggion Emilia) | *Bound sets for differential inclusions with Floquet boundary conditions* |

## Room No. 347
## Wednesday, August 29

**Short Communications**

### Partial Differential Equations

Chair: M. Grinfeld

| | | |
|---|---|---|
| $10^{30}$–$10^{45}$ | **A. Novick-Cohen** (Technion, Haifa) | *On a phase field model with memory* |
| $10^{50}$–$11^{05}$ | **L. Simon** (Eőtvös Loránd Univ., Budapest) | *On parabolic functional differential equations in unbounded domains* |
| $11^{10}$–$11^{25}$ | **T. Człapiński** (Univ. of Gdańsk) | *The mixed problem for an infinite system of first order functional differential equations* |
| $11^{30}$–$11^{45}$ | **R. Schnaubelt** (Univ. Halle (Saale)) | *Feedbacks for non-autononmous regular linear systems* |
| $11^{50}$–$12^{05}$ | **V. Chrastinová** (Univ. of Technology, Brno) | *A general controllability theorem* |

## Room No. 120
## Wednesday, August 29

**Invited lectures**

**Partial Differential Equations**

Chair: A. Ambrosetti

| | | |
|---|---|---|
| $8^{50}$– $9^{20}$ | **J. Prüss** (Martin-Luther-Univ., Halle) | *Local wellposedness and analyticity of the solutions of a free boundary value problem for the Navier-Stokes equations* |
| $9^{25}$– $9^{55}$ | **A. Lunardi** (Parma Univ.) | *Stability in free boundary parabolic problems* |

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## Room No. 120
## Wednesday, August 29

**Short Communications**

### Partial Differential Equations

Chair: M. Grobbelaar

| | | |
|---|---|---|
| $10^{30}$–$10^{45}$ | **N. Ackermann** (Math. Inst. Univ., Giessen) | *On a strongly indefinite Schrödinger equation with nonlocal superlinear part* |
| $10^{50}$–$11^{05}$ | **P. d'Avenia** (Univ. degli studi di Bari) | *Infinitely many solitary waves in three space dimensions* |
| $11^{10}$–$11^{25}$ | **Y. Morita** (Ryukoku Univ., Otsu) | *Stable solutions to Ginzburg-Landau equations in a thin domain* |
| $11^{30}$–$11^{45}$ | **A. Szulkin** (Univ. of Stockholm) | *An asymptotically periodic Schrödinger equation with indefinite linear part* |
| $11^{50}$–$12^{05}$ | **I. Petrushko** (R. F. Moscow, Moscow) | *On the boundary behavior of degenerated elliptic equations* |

## Room No. 319
## Wednesday, August 29

**Invited lectures**

### Numerical Methods

Chair: R. H. Nochetto

| | | |
|---|---|---|
| $8^{50}$– $9^{20}$ | **M. Stynes** (Nat. Univ. of Ireland, Cork) | *n-Widths for singularly perturbed problems* |
| $9^{25}$– $9^{55}$ | **J. H. Brandts** (Univ. of Utrecht) | *Some considerations on mixed finite element methods* |

# Room No. 319
## Wednesday, August 29

**Short Communications**

### Numerical Methods

Chair: L. Angerman

| | | |
|---|---|---|
| $10^{30}$–$10^{45}$ | **M. Lukáčová** (Univ. of Technology, Brno) | *Multi-dimensional schemes for systems of hyperbolic equations* |
| $10^{50}$–$11^{05}$ | **M. Beneš** (Czech Techn. Univ., Prague) | *On a model of solidification with advection effects* |
| $11^{10}$–$11^{25}$ | **A. Durán** (Univ. de Valladolid) | *Numerical behaviour of solitary waves in nonlinear dispersive equations* |
| $11^{30}$–$11^{45}$ | **D. Pancza** (Slovak Univ. of Technology in Bratislava) | *On a full von Kármán system for viscoelastic Mindlin-Timoshenko plates* |
| $11^{50}$–$12^{05}$ | **E. Cuesta** (Escuela Univ. Politecnica, Valladolid) | *A one-step second order method for fractional integro-differential equations in Banach spaces* |

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## Room No. 100
## Thursday, August 30

**Plenary lectures**

Chair: P. Quittner

| | | |
|---|---|---|
| $8^{50}$– $9^{40}$ | **W. Wendland** (Univ. of Stuttgart) | *On nonlinear Riemann-Hilbert problems* |
| $9^{45}$–$10^{35}$ | **O. Došlý** (Math. Inst. Acad. Sci., Brno) | *Qualitative theory of half-linear second order differential equations* |

## Room No. 100
## Thursday, August 30

**Plenary lectures**

Chair: J. Prüss

| | | |
|---|---|---|
| $11^{10}$–$12^{00}$ | **I. Laine** (Univ. of Joensuu) | *Painlevé differential equations in the complex plane* |

# Room No. 304
# Thursday, August 30

**Short Communications**

## Ordinary Differential Equations

Chair: M. Švec

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **Z. Afsharnezhad** (Ferdowsi Univ. of Mashhad) | *Some conditions for nonlinear third differential equations to have periodic solutions* |
| $16^{00}$–$16^{15}$ | **M. Bartušek** (Masaryk Univ., Brno) | *On existence of singular solutions* |
| $16^{20}$–$16^{35}$ | **A. Cabada** (Univ. of Santiago de Compostela) | *Extremality results of explicit and implicit singular differential diffusion equations* |
| $16^{40}$–$16^{55}$ | **A. Cernea** (Univ. of Buchurest) | *Viability for a class of nonconvex differential inclusions* |

## Room No. 101
## Thursday, August 30

**Invited lectures**

**Ordinary Differential Equations**

Chair: M. Dauge

| | | |
|---|---|---|
| $14^{00}$–$14^{30}$ | **S. A. Nazarov** (St. Petersburg State Univ.) | *Localization effects for eigenfunctions near to the edge of a thin domain* |
| $14^{35}$–$15^{05}$ | **G. Warnecke** (Otto-von-Guericke-Univ. Magdeburg) | *On measure solutions to the zero pressure gas model and their uniqueness* |

# Room No. 101
# Thursday, August 30

**Short Communications**

**Ordinary Differential Equations**

Chair: J. Tabor

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **J. Jaroš** (Komenský Univ., Bratislava) | *On black- and white-hole solutions of second order nonlinear ordinary differential equations* |
| $16^{00}$–$16^{15}$ | **O. Zernov** (South Ukrainian State Pedag. Univ., Odessa) | *Implicit initial value problems: solvability, asymptotics, number of solutions* |
| $16^{20}$–$16^{35}$ | **S. Rybicki** (Nicholas Copernicus Univ., Toruń) | *Global bifurcations of periodic solutions of the restricted three body problem* |
| $16^{40}$–$16^{55}$ | **Y. Kuzina** (South Ukrainian State Pedagog. Univ., Odessa) | *The qualitative analysis of an initial value problem* |

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## Room No. 310
## Thursday, August 30

**Short Communications**

### Ordinary Differential Equations

Chair: Ya. M. Goltser

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **R. L. Pouso** (Univ. of Santiago de Compostela) | *On first order discontinuous scalar initial value problems* |
| $16^{00}$–$16^{15}$ | **J. Giné** (Univ. de Lleida) | *Sufficient conditions for a degenerate center* |
| $16^{20}$–$16^{35}$ | **D. Torres** (Univ. de Aveiro) | *Regularity of minimizers in optimal control* |
| $16^{40}$–$16^{55}$ | **S. Matucci** (Univ. of Florence) | *Zero convergent solutions of certain ordinary nonlinear systems* |

## Room No. 347
## Thursday, August 30

**Short Communications**

### Partial Differential Equations

Chair: N. Hirano

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **S. V. Kravchuk** (Univ. of South Australia, Mudgeeraba) | *On approximate solution to semi-linear elliptic boundary problem with small parameter at one higher derivative* |
| $16^{00}$–$16^{15}$ | **D. Apushkinskaya** (Saarland Univ., Saarbrücken) | *Quasilinear elliptic Dirichlet problem in nonregular domains* |
| $16^{20}$–$16^{35}$ | **V. Liskevich** (Univ. of Bristol) | *Exterior problem for a class of semilinear equations* |
| $16^{40}$–$16^{55}$ | **R. Stańczy** (University of Łódź) | *Bounded solutions of nonlinear elliptic equations in unbounded domains* |

## Room No. 120
## Thursday, August 30

**Invited lectures**

### Partial Differential Equations

Chair: A. Lunardi

| | | |
|---|---|---|
| $14^{00}$–$14^{30}$ | **P. Drábek** (Univ. of West Bohemia, Plzeň) | *Some qualitative properties of quasilinear boundary value problems with the p-Laplacian* |
| $14^{35}$–$15^{05}$ | **A. A. Arkhipova** (St-Peterburg State Univ.) | *Global existence for q-nonlinear nondiagonal parabolic systems* |

## Room No. 120
## Thursday, August 30

**Short Communications**

### Partial Differential Equations

Chair: L. Recke

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **M. Kučera** (Math. Inst. Acad. Sci., Prague) | *Bifurcation for variational inequalities based on implicit function theorem* |
| $16^{00}$–$16^{15}$ | **J. Eisner** (Math. Inst. Acad. Sci., Prague) | *Destabilizing effect of multivalued boundary conditions for reaction-diffusion systems* |
| $16^{20}$–$16^{35}$ | **G. Smyrlis** (National Technical Univ. of Athens) | *Nonlinear hemivariational inequalities* |
| $16^{40}$–$16^{55}$ | **K. Kikuchi** (Shizuoka Univ., Hamamatsu) | *Constructing weak solutions in a direct variational method and an application of varifold theory (a recent result)* |

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## Room No. 303
## Thursday, August 30

**Short Communications**

### Partial Differential Equations

Chair: J. Filo

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **O. Lévêque** (École Polytechnique Fédérale de Lausanne) | *Hyperbolic equations driven by boundary noises* |
| $16^{00}$–$16^{15}$ | **J. A. Langa** (Univ. of Sevilla) | *Approximation of attractors for multivalued random dynamical systems* |
| $16^{20}$–$16^{35}$ | **J. Valero** (Universidad Cardenal Herrera, Elche (Alicante)) | *Attractors of nonautonomous multivalued dynamical systems* |
| $16^{40}$–$16^{55}$ | **J. Cholewa** (Inst. of Math., Katowice) | *Global attractors in abstract parabolic problems* |

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## Room No. 319
## Thursday, August 30

**Invited lectures**

### Numerical Methods

Chair: M. Stynes

| | | |
|---|---|---|
| $14^{00}$–$14^{30}$ | **I. Hlaváček** (Math. Inst. Acad. Sci., Prague) | *Worst scenario approach for elastoplasticity with hardening and uncertain data* |
| $14^{35}$–$15^{05}$ | **R. H. Nochetto** (Univ. of Maryland, College Park) | *An adaptive Uzawa FEM for Stokes: convergence without the inf-sup* |

## Room No. 319
## Thursday, August 30

**Short Communications**

### Numerical Methods

Chair: M. Lukáčová

| | | |
|---|---|---|
| $15^{40}$–$15^{55}$ | **H. Gilsing** (Humboldt Univ. of Berlin) | *On stability of the Euler scheme for affine stochastic delay differential equations* |
| $16^{00}$–$16^{15}$ | **J. Dalík** (Univ. of Technology, Brno) | *Applications of quadratic interpolation polynomials in vertices of plane triangulation* |
| $16^{20}$–$16^{35}$ | **P. M. Lima** (Instituto Superior Técnico, Lisboa) | *Asymptotic and numerical analysis of a singular boundary-value problem of Emden-Fowler type* |

## Room No. 100
## Friday, August 31

**Plenary lectures**

Chair: T. Kilpeläinen

| | | |
|---|---|---|
| $8^{50}$– $9^{40}$ | **M. Křížek** (Math. Inst. Acad. Sci., Prague) | *Colouring and refining simplicial partitions in* $R^d$ |
| $9^{45}$–$10^{35}$ | **E. Feireisl** (Math. Inst. Acad. Sci., Prague) | *On some recent results on the existence and the long-time behaviour of solutions to the Navier-Stokes equations of compressible viscous fluids* |

## Room No. 100
## Friday, August 31

**Plenary lectures**

Chair: J. Jarník

| | | |
|---|---|---|
| $11^{10}$–$12^{00}$ | **P. Quittner** (Komenský Univ., Bratislava) | *A priori bounds of solutions of superlinear parabolic problems and applications: continuity of the blow-up time, existence of stationary and periodic solutions* |

# Room No. 101
## Friday, August 31

**Short Communications**

### Ordinary Differential Equations

Chair: A. Augustynowicz

| | | |
|---|---|---|
| $14^{00}$–$14^{15}$ | **B. Krajc** (Technical Univ. of Ostrava) | *Periodic solutions in a given set of differential systems* |
| $14^{20}$–$14^{35}$ | **T. Nishimoto** (Kochi Univ. of Technology, Tosayamada) | *On the new phenomena of complex WKB method for higher order ordinary differential equation: connection formulas* |
| $14^{40}$–$14^{55}$ | **E. Petropoulou** (Univ. of Patras) | *Analytic solutions of the Painlevé equations in the Banach space $H_1(\Delta)$* |
| $15^{00}$–$15^{15}$ | **P. Pokorný** (Inst. of Chem. Technology, Prague) | *Zig-zag dynamical systems and their Baker-Campbell-Hausdorff formula* |

## Room No. 101
## Friday, August 31

**Short Communications**

**Ordinary Differential Equations**

Chair: A. Klíč

| | | |
|---|---|---|
| $15^{50}$–$16^{05}$ | **J. Kalas** (Masaryk Univ., Brno) | *Asymptotic properties of a system of two differential equations with delay* |
| $16^{10}$–$16^{25}$ | **P. Řehák** (Masaryk Univ., Brno) | *Decaying solutions of discrete systems* |

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## Room No. 303
## Friday, August 31

**Short Communications**

### Ordinary Differential Equations

Chair: Z. Došlá

| | | |
|---|---|---|
| $14^{00}$–$14^{15}$ | **A. J. Ureña** (Univ. de Granada) | *Many periodic orbits for dissipative, forced, entire pendulum-like equations* |
| $14^{20}$–$14^{35}$ | **L. Sanchez** (CMAF Univ. of Lisbon) | *Heteroclinics for a class of fourth order conservative differential equations* |
| $14^{40}$–$14^{55}$ | **A. Szukala** (A. Mickiewicz Univ., Poznań) | *Aronszajn type theorems for an $M$-th order differential equation in Banach spaces* |
| $15^{00}$–$15^{15}$ | **D. Ya. Khusainov** (Univ. of Kiev) | *Stability and convergence decisions of nonautonomous systems with pure delay* |

# Room No. 303
# Friday, August 31

**Short Communications**

**Ordinary Differential Equations**

Chair: J. Diblík

| | | |
|---|---|---|
| $15^{50}$–$16^{05}$ | **C. J. E. Vanegas** (Universidad Simón Bolívar, Caracas) | *Asymptotic solutions of linear integro-differential equations* |
| $16^{10}$–$16^{25}$ | **J. Manojlović** (Univ. of Niš) | *Oscillations criteria for second order nonlinear differential equations involving integral averages* |

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## Room No. 304
## Friday, August 31

**Short Communications**

### Ordinary Differential Equations

Chair: S. Staněk

| | | |
|---|---|---|
| $14^{00}$–$14^{15}$ | **J. Šremr** (Masaryk Univ., Brno) | *On periodic type BVP for first order FDE* |
| $14^{20}$–$14^{35}$ | **M. Sobalová** (Masaryk Univ., Brno) | *Asymptotic behaviour of nonoscillatory solutions of the fourth order differential equations* |
| $14^{40}$–$14^{55}$ | **L. Malaguti** (Univ. of Modena & Reggion Emilia, Modena) | *On a second order singular boundary value problem* |
| $15^{00}$–$15^{15}$ | **P. Somora** (Math. Inst. Acad. Sci., Bratislava) | *The number of solutions for the second order nonlinear boundary value problem via the root functions method* |

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## Room No. 304
## Friday, August 31

**Short Communications**

### Ordinary Differential Equations

Chair: M. Tvrdý

| | | |
|---|---|---|
| $15^{50}$–$16^{05}$ | **A. Prykarpatski** (Univ. of Mining and Metallurgy, Kraków) | *On Picard-Fuchs type equations related with integral submanifolds imbedding mapping of integrable dynamical systems* |
| $16^{10}$–$16^{25}$ | **L. Polák** (Masaryk Univ., Brno) | *On oscillation and nonoscillation criteria for a two-dimensional system of first order non-linear ordinary differential equations* |

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## Room No. 347
## Friday, August 31

**Short Communications**

**Partial Differential Equations**

Chair: O. John

| | | |
|---|---|---|
| $14^{00}$–$14^{15}$ | **K. Hayasida** (Fukui Univ. of Technology) | *On the Dirichlet problem for prescribed mean curvature equations in some non-convex domains* |
| $14^{20}$–$14^{35}$ | **D. Ševčovič** (Komenský Univ., Bratislava) | *A direct method for solving an anisotropic mean curvature flow of planar curve with an external force* |
| $14^{40}$–$14^{55}$ | **H. Tahara** (Sophia Univ., Tokyo) | *On the singularities of solutions of nonlinear partial differential equations in the complex domain* |
| $15^{00}$–$15^{15}$ | **H. Yamazawa** (Caritas College, Yokohama) | *Singular solutions for nonlinear first order partial differential equations* |

## Room No. 347
## Friday, August 31

**Short Communications**

### Partial Differential Equations

Chair: J. Eisner

| | | |
|---|---|---|
| $15^{50}$–$16^{05}$ | **M. Wolfrum** (Weierstrass Inst. for Appl. Anal. and Stoch., Berlin) | *A new criterion for heteroclinic connections in scalar parabolic PDE* |
| $16^{10}$–$16^{25}$ | **K. Wojteczek** (Techn. Univ. of Opole) | *On some further quadratic integral inequalities* |

# Room No. 120

## Friday, August 31

**Short Communications**

### Partial Differential Equations

Chair: T. Roubíček

| | | |
|---|---|---|
| $14^{00}$–$14^{15}$ | **G. F. Ortegón** (Univ. of Cadiz) | *A doubly degenerated elliptic systems* |
| $14^{20}$–$14^{35}$ | **E. Knobloch** (Univ. of Leeds) | *New type of complex dynamics in the* 1 : 2 *spatial resonance* |
| $14^{40}$–$14^{55}$ | **B. Szomolay** (Komenský Univ., Bratislava) | *On some nonlinear vibration equations* |
| $15^{00}$–$15^{15}$ | **E. Tchernykh** (Moscow) | *On the behaviour of the solutions of parabolic equations with reversible time direction in a rectangular domain* |

# Room No. 120
# Friday, August 31

**Short Communications**

**Partial Differential Equations**

Chair: H. Petzeltová

| | | |
|---|---|---|
| $15^{50}$–$16^{05}$ | **S. E. Rebiai** (Univ. of Batna) | *Boundary stabilization of the Schrödinger equation in almost star-shaped domain* |
| $16^{10}$–$16^{25}$ | **T. Kaminogo** (Tohoku Gakuin Univ., Sendai) | *On topological degree to multi-valued solution map in a semilinear parabolic partial differential equation* |

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## Room No. 319
## Friday, August 31

**Short Communications**

### Numerical Methods

Chair: J. Chleboun

| | | |
|---|---|---|
| $14^{00}$–$14^{15}$ | **A. V. Kamyad** (Ferdowsi Univ., Mashad) | *A new approach for solving nonlinear PDEs problem* |
| $14^{20}$–$14^{35}$ | **J. Mikyška** (Czech Techn. Univ., Prague) | *Numerical model of thermal flow in porous media* |
| $14^{40}$–$14^{55}$ | **M. Gachpazan** (Damghan Sci. Univ., Damghan) | *A new approach for Stokes problem* |