# Time tables

# Wednesday (July 1)

09:00-09:15	Opening ceremony					
09:20-10:10		Diekmann				
10:20–11:10		Nussbaum				
11:40–12:10	Inaba	Kovács				
12:15–12:45	Takeuchi					
15:00-15:30	Appleby	Nakata				
15:35–16:05	Ruiz-Herrera					
16:30–16:50	Nagy	Damak	Mohamady			
16:50–17:10	Barbarossa	Péics	Şahiner			
17:10–17:30	Nah	Cernea				
17:30–17:50	Vizi	Mesquita	Stehlík			
17:50–18:10	Dénes	Reinfelds	Csizmadia			
18:10–18:30	Radin					
19:00-	Welcome reception					

# Thursday (July 2)

09:00-09:50	Mallet-Paret				
10:00–10:50		Fiedler			
11:20–11:50	Pap	Graef			
11:55–12:25	Humphries	Faragó			
12:30-13:00	Atay				
15:00-15:30	Pituk	Domoshnitsky			
15:35–16:05	Győri				
16:10–16:40	Vas				
17:05–17:25	Balázs	Slavík	Kıvılcım		
17:25–17:45	Kiss	Szymańska-Dębowska			
17:45–18:05	Svoboda	Bognár	Akhmet		
18:30-	Sightseeing tour				

# Time tables

# Friday (July 3)

09:00-09:50		Wu			
10:00-10:50	Walther				
11:20–11:50	Lani-Wayda	Mochizuki			
11:55–12:25	Caraballo	Muroya			
12:30-13:00	Hupkes	Nakaoka			
15:00-15:30	Verduyn Lunel	Simon, L.			
15:35–16:05	Röst	Došlý			
16:30–16:50	Han	Polner	Sergejeva		
16:50–17:10	Russ	Mincsovics	Oinarov		
17:10–17:30	Chekroun	Csomós	Liška		
17:30–17:50	Patterson	Eremin	Ramazanova		
17:50–18:10	Besenyei	<u> </u>			
18:30-	(	Conference dinner			

# Saturday (July 4)

09:00-09:50	Pötzsche				
10:00-10:30	Szczelina	Enatsu			
10:35-11:05	Hartung	Simon, P.			
11:25–11:55	Obaya	Yanchuk			
12:00-12:30	Rezounenko	Kuniya			
12:35-12:55	Boldog		Atslega		
12:55–13:15	Nishiguchi	Ospanov	Szijártó		
13:15–13:35	Karsai	— Kashkynbayev			
13:35-	Closing remarks				

# **DETAILED PROGRAM**

### Wednesday (July 1)

### Morning

#### **Plenary section**

09:00-09:15	Opening ceremony
09:20-10:10	Diekmann, Odo: Delay equations revisited
10:20-11:10	Nussbaum, Roger: Analyticity and nonanalyticity for solutions of "ana-
	lytic" differential-delay equations

#### **Coffee break**

Invited sectio	n A Chair: Odo Diekmann
11:40-12:10	Inaba, Hisashi: Revisiting the Kermack and McKendrick endemic model
12:15-12:45	Takeuchi, Yasuhiro: Stability of intracellular delay, immune activation de-
	lay and nonlinear incidence on viral dynamics

#### Invited section B

Chair: Fatihcan Atay Kovács, Mihály: Higher order Grünwald approximations of fractional 11:40-12:10 derivatives and fractional powers of operators 12:15-12:45 Răsvan, Vladimir: On functional differential equations associated to controlled structures with propagation

### Afternoon

Invited section	n A Chair: John Graef
15:00-15:30	Appleby, John: Preservation of asymptotic behaviour when discretising
	highly nonlinear stochastic differential equations
15:35–16:05	<b>Ruiz-Herrera, Alfonso:</b> Global dynamics of populations with competition among immature individuals

#### **Invited section B**

**Chair: Gergely Röst** 

**Chair: Tibor Krisztin** 

15:00-15:30	Nakata, Yukihiko: On a transcendental equation from an endemic model
15:35-16:05	Di Loreto, Michael: Approximation of distributed parameter systems by
	delay systems: a control perspective

#### **Coffee break**

#### Contributed section A

Chair: János Karsai

16:30–16:50	<b>Nagy, Noémi:</b> Approximate master equations for dynamical processes on graphs
16:50–17:10	<b>Barbarossa, Maria Vittoria:</b> Immuno-epidemiology of a population structured by immune status
17:10–17:30	<b>Nah, Kyeongah:</b> Malaria dynamics in seasonal environment with long incubation period in hosts
17:30–17:50	<b>Vizi, Zsolt:</b> Generalization of pairwise models to non-Markovian epidemics on networks
17:50–18:10	Dénes, Attila: Global stability for SIR and SIRS models via Dulac functions

#### Contributed section B

Chair: Michael Di Loreto

16:30–16:50	Damak, Sérine: Exponential stability of difference equations with dis-
	tributed delay
16:50–17:10	Péics, Hajnalka: System of delay difference equations with continuous time
	with lag function between two known functions
17:10-17:30	Cancelled
17:30-17:50	Mesquita, Jaqueline: Periodic averaging for <i>q</i> -difference equations
17:50–18:10	Reinfelds, Andrejs: Integral stability for dynamic systems on time scale
18:10–18:30	Radin, Michael A.: Discrete model of population dynamics of Easter Island
	and extinct populations

#### Contributed section C

Chair: Alexander Domoshnitsky

16:30-16:50	Mohamady, Nahed: Boundedness of solutions of nonlinear delay differen-
	tial equations
16:50–17:10	Şahiner, Sinem: Sturm comparison theorems for some elliptic type equa-
	tions via Picone type inequalities
17:10-17:30	Cernea, Aurelian: On the existence of solutions for a nonconvex hyperbolic
	differential inclusion of third order
17:30-17:50	Stehlík, Petr: Reaction-diffusion equations on lattices and graphs
17:50-18:10	Csizmadia, László: Periodic trajectories of the linear swinging model

#### 19:00- Welcome reception, Atrium of the Rector's Central Building

# Thursday (July 2) Morning

Plenary section	n					Chair:	Eduar	rdo Liz
09:00-09:50	Mallet-Paret,	John:	Tensor	products,	positive	operators,	and	delay-
	differential eq	uations						
10:00-10:50	Fiedler, Berno	old: Scho	penflies s	spheres in S	Sturm attr	actors		

### Coffee break

Invited sectio	n A Chair: Mihály Pituk
11:20-11:50	Pap, Gyula: Asymptotic inference for a stochastic differential equation with
	uniformly distributed time delay
11:55-12:25	Humphries, Tony: Lyapunov-Razumikhin techniques for state-dependent
	DDEs
12:30-13:00	Atay, Fatihcan: On the lumpability of differential equations

Invited section B	

Chair: László Simon

11:20-11:50	Graef, John: Oscillatory behavior of a third-order neutral dynamic equation
	with distributed delays
11:55-12:25	Faragó, István: Numerical modeling of epidemic propagation
12:30-13:00	Diblík, Josef: Uniform exponential stability conditions for systems of linear
	delay differential equations

### Afternoon

Invited section A Chair: Tomás Cara	
15:00-15:30	Pituk, Mihály: Asymptotic results for a linear delay differential equation
15:35-16:05	Győri, István: On a logistic equation with delayed positive feedback
16:10-16:40	Vas, Gabriella: New configurations of periodic orbits for delay equations
	with positive feedback

#### Invited section B

Chair: Josef Diblík

15:00-15:30	Domoshnitsky, Alexander: Stability of delay differential systems
15:35-16:05	Došlá, Zuzana: Asymptotic problems for fourth order differential equations
16:10–16:40	<b>Federson, Marcia:</b> Periodic solutions and bifurcation in generalized ODEs and applications

### Coffee break

#### Contributed section A

Chair: Sjoerd Verduyn Lunel

17:05–17:25	Balázs, István: Periodic solutions of a differential equation with a queueing
	delay
17:25–17:45	Kiss, Gábor: Periodic solutions of a delayed Van der Pol oscillator
17:45-18:05	Svoboda, Zdeněk: Representation of solutions of second-order linear dif-
	ferential systems with constant delays

#### Contributed section B

**Chair: Marcia Federson** 

17:05–17:25	Slavík, Antonín: Product integration and linear differential equations in
	Banach algebras
17:25–17:45	Szymańska-Dębowska, Katarzyna: On a nonlocal resonant boundary value
	problem involving <i>p</i> -Laplacian
17:45-18:05	Bognár, Gabriella: On the soultions to Navier-Stokes problem for some
	non-Newtonian cases

#### Contributed section C

Chair: Mihály Kovács

17:05-17:25	Kıvılcım, Ayşegül: Chaos by neural networks: the quasi-periodic route
17:25–17:45	Cancelled
17:45–18:05	Akhmet, Marat: Functional differential equations with piecewise constant
	argument

18:30– Sightseeing tour

## Friday (July 3) Morning

#### **Plenary section**

#### **Chair: Wolfgang Ruess**

09:00-09:50	Wu, Jianhong: The Fisher–KPP equation with moving favorable and lethal
	habitats
10:00-10:50	Walther, Hans-Otto: State-dependent delays which yield complicated mo-
	tion

#### **Coffee break**

Invited sectio	n A Chair: Ferenc Hartung
11:20–11:50	Lani-Wayda, Bernhard: State-dependent delays which yield complicated motion, Part II.
11:55–12:25	<b>Caraballo, Tomás:</b> Long time behaviour of delay 2D Navier–Stokes equations
12:30-13:00	<b>Hupkes, Hermen Jan:</b> Travelling waves for fully discretized bistable reaction–diffusion problems

#### **Invited section B**

Chair: Yasuhiro Takeuchi

11:20-11:50	Mochizuki, Atsushi: Dynamics of complex biological systems deter-
	mined/controlled by minimal subsets of molecules in regulatory networks
11:55-12:25	Muroya, Yoshiaki: Stability analysis of multi-group SIS epidemic models
	and related models.
12:30-13:00	Nakaoka, Shinji: Mathematical modeling and simulation of HIV infection
	in a lymph node network

### Afternoon

Invited sectio	n A Chair: John Appleby
15:00-15:30	<b>Verduyn Lunel, Sjoerd:</b> The spectral theory for periodic delay equations revisited
15:35–16:05	<b>Röst, Gergely:</b> Some interesting features of periodic delay differential equations

#### **Invited section B**

Chair: Zuzana Došlá

15:00-15:30	Simon, László:	On a system	of nonlinear	partial	functional	differential
	equations					
15.05 16.05	D-114 0-114	O = 111 = 11 = 1		1		

15:35–16:05 **Došlý, Ondřej:** Oscillation constants for a class of second-order ordinary differential equations

#### Coffee break

#### Contributed section A

16:30–16:50	Han, Xiaoying: Chemostat in varying environments
16:50–17:10	Russ, Evamaria: Topological decoupling and linearization of nonau-
	tonomous reaction-diffusion equations
17:10–17:30	Chekroun, Abdennasser: Traveling wave fronts in a coupled delayed
	reaction-diffusion and difference system
17:30–17:50	Patterson, Denis: Memory-dependent growth rates in sublinear Volterra
	differential equations
17:50–18:10	Besenyei, Ádám: Bounds for the expected value of one-step processes

**Contributed section B** 

**Chair: Tony Humphries** 

16:30–16:50	Polner, Mónika: A time-discontinuous Galerkin method for neural field
	models with transmission delays
16:50–17:10	Mincsovics, Miklós Emil: On some properties of lower triangular banded
	Toeplitz matrices corresponding to linear multistep methods
17:10-17:30	Csomós, Petra: Numerical stability for nonlinear evolution equations
17:30-17:50	Eremin, Alexey: Functional Continuous Runge-Kutta-Nyström methods
17:50–18:10	Gamliel, Dan: Approximate solutions for delay differential equations

#### Contributed section C

Chair: Ondřej Došlý

16:30–16:50	Sergejeva, Natalija: On the Fučík type problem with nonlocal integral houndary conditions
16:50–17:10	<b>Oinarov, Ryskul:</b> Weighted inequality and some qualitative characteristics
	of Sturm–Liouville type equation
17:10-17:30	Liška, Petr: On the oscillation of third order differential equations with
	delay
17:30-17:50	Ramazanova, Khanym: Sturm type comparison theorems for the half-linear
	equations with damping term
17:50–18:10	Cancelled

18:30- Conference dinner at the Congress Hall of the Rector's Central Building

# Saturday (July 4) Morning

Plenary section	on Chair: István Győri
09:00-09:50	<b>Pötzsche, Christian:</b> The role of the dichotomy spectrum in nonautonomous bifurcations
Invited sectio	n A Chair: Bernhard Lani-Wayda
10:00-10:30	Szczelina, Robert: Constructing Poincaré maps for delay differential equa-
	tions using rigorous interval arithmetic
10:35–11:05	Hartung, Ferenc: Nonlinear variation of constants formula for differential equations with state-dependent delays
Invited sectio	n B Chair: István Faragó
10:00-10:30	Enatsu, Yoichi: Loss of immunity on epidemiological models with infection
	age
10:35–11:05	<b>Simon, Péter L.:</b> Modelling epidemic propagation on heterogeneous net- works by simple systems of differential equations
	Coffee break
Invited sectio	n A Chair: Christian Pötzsche
11:25–11:55	<b>Obaya, Rafael:</b> Continuous separation for non-autonomous FDE with finite delay
12:00-12:30	<b>Rezounenko, Alexander:</b> Local and asymptotic properties of solutions to parabolic partial differential equations with state-dependent delays
Invited sectio	n B Chair: Péter L. Simon
11:25–11:55	Yanchuk, Serhiy: Delay-induced patterns in a two-dimensional lattice of coupled oscillators
12:00-12:30	Kuniya, Toshikazu: Lyapunov functions for a spatially diffusive SIR epi- demic model
Contributed s	section A Chair: Yoichi Enatsu
12:35–12:55	<b>Boldog, Péter:</b> Herd immunity caused by a toxoid vaccine – the case study of diphtheria by dynamic models
12:55–13:15	<b>Nishiguchi, Junya:</b> Asymptotic stability of constant solutions in delay differential equations with a constant delay and transcendental equations with complex coefficients
13:15–13:35	Karsai, János: On the competition of species for territory with overcoloniza- tion

#### **Contributed section B**

12:35-12:55	Cancelled
12:55–13:15	Ospanov, Kordan: Complete second order differential operator with un-
	bounded drift
13:15–13:35	Cancelled

#### Contributed section C

#### Chair: Robert Szczelina

12:35–12:55	Atslega, Svetlana: Solutions of two-point BVP via phase-plane analysis
12:55–13:15	Szijártó, András: Vibrating infinite string under a minimally smooth force
	and a general observation condition
13:15–13:35	Kashkynbayev, Ardak: Finite-time nonautonomous bifurcation in impul- sive systems

13:35– Closing remarks