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# Newsletter of the International Society of Difference Equations



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Newsletter Editor: Małgorzata Guzowska



# Dear ISDE members, dear colleagues and friends,

as new president I am looking forward to representing our **International Society of Difference Equations** in the following two years. Let me thank our former president **Martin Bohner** (Missouri S&T, USA) for his fine work over the recent years - his help and advice as current vice president is also appreciated. Together with **Stefan Hilger** (Katholische Universität Eichstätt-Ingolstadt, Germany) and **Stefan Siegmund** (Dresden University of Technology, Germany) three former students of the society's first president, the late **Bernd Aulbach**, are members of the board of directors now. I hope to promote difference equations in **Bernd Aulbachs** tradition.

This brings me to next year's two conferences under the auspices of the ISDE:

- PODE 2016 will be in Riga, Latvia, May 17-20. Many of you surely remember the successful and well-organized ICDEA 2010 in Riga and this alone is a good reason to (re-) visit this beautiful baltic city. For more information let me refer tohttp://www.lu.lv/pode2016/
- ICDEA 2016 is already the 22nd conference in this series and organized by the Osaka Prefecture University in Osaka, Japan, July 24-29. Without question Japan is always an exciting place to visit. See http://www.atalacia.com/icdea2016/osaka/ for more details.

We hope that many of you will be able to visit these meetings!

Finally, I would like to thank our sponsoring members for their support of the society. Of course, the regular members of the ISDE are invited to become sponsoring members in 2016. Sponsoring membership (100\$/year) includes free access to the Journal of Difference Equations and Applications for one year.

I wish all of you and your families recreational holidays, as well as a peaceful and successful **New Year 2016.** 

Looking forward to meeting you, best regards from Austria,

# Christian Pötzsche

ISDE President



## INTRODUCTION FROM THE NEWSLETTER EDITOR

#### **Dear Colleagues:**

It is my great pleasure to present to you the new issue of the ISDE Newsletter. I hope you will enjoy reading this new issue.

Also thanks to all ISDE members who have sent information for this newsletter.

I would also like to ask the members of the Society to contribute information and articles about their faculties, new books, new conferences, new grants and job opportunities to the newsletter and webpage, as well as any relevant information about mathematics or about our members.



All information may be emailed to: MalgosiaGuzowska@gmail.com

> With Best Regards Małgorzata Guzowska

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# CONFERENCE REPORTS

## ICDEA 2015

The twenty first annual International Conference on Difference Equations and Applications (ICDEA 2015) took place at the Bialystok University of Technology (Białystok, Poland), from July 19 to 25, 2015.



Group picture, ICDEA 2015, Białystok (Poland),.

Professor **Agnieszka Barbara Malinowska** chaired the organizing committee and is to be highly commended for the overwhelming success of the conference. Special topic sessions focused on the all areas of the theory and applications of difference equations, broadly defined, and discrete dynamical systems.

Special thanks go to the conference committees:

#### Scientific Committee:

Zbigniew Bartosiewicz (Chair) Zuzana Došlá, Czech Republic Ülle Kotta, Estonia Agnieszka B. Malinowska, Poland Małgorzata Migda, Poland Michał Misiurewicz, USA Mihaly Pituk, Hungary Christian Pötzsche, Austria Ewa Schmeidel, Poland Organizing Committee:

Agnieszka B. Malinowska (Chair) Zbigniew Bartosiewicz Ewa Girejko Alina Gleska Małgorzata Guzowska Klara Janglajew Małgorzata Migda Dorota Mozyrska Ewa Pawłuszewicz Ewa Schmeidel During the conference plenary addresses were given by:

- Jacek Banasiak (Technical University of Łódź, Poland, and University of KwaZulu Natal, South Africa)
- Martin Bohner (Missouri University of Science and Technology, USA)
- István Győri (University of Pannonia, Hungary)
- Tibor Krisztin (Bolyai Institute, University of Szeged, Hungary)
- Michał Misiurewicz (Indiana University-Purdue University Indianapolis, USA)
- Mihály Pituk (University of Pannonia, Hungary)
- Ryszard Rudnicki (University of Silesia and Institute of Mathematics Polish Academy of Sciences, Poland)
- Stefan Siegmund (Technische Universität Dresden, Germany)
- L'ubomír Snoha (Matej Bel University, Slovakia)

#### Special talk of one of the winners of the 2014 Best JDEA Paper Prize

Armengol Gasull (Universitat Autònoma de Barcelona, Spain)\_

#### Special talk of the winner of the 2015 Bernd Aulbach Prize

Jean Mawhin (Catholic University of Louvain, Institute of Research in Mathematics and Physics, Belgium)\_

#### Special talk of the winner of the 2011 Bernd Aulbach Prize

Oleksandr N. Sharkovsky (Institute of Mathematics, NAS of Ukrain)



Prof. Jean Mawhin - Special talk of the winner of the 2015 Bernd Aulbach Prize.

# PODE 2015

The conference **Progress on Difference Equations 2015 (PODE 2015)** took place the University of Beira Interior, Portugal from June 15 to June 18, 2015.



PODE 2015,

The organizers, led by Professor **Rui Ferreira**, chair of the Organizing Committee and **Martin Bohner**, chair of the Scientific Committee are to be congratulated on putting together this successful conference. The conference addressed difference equations, discrete dynamical systems and their applications.

Special thanks go to the conference committees:

Scientific Committee:	Organizing Committee:
Martin Bohner (Missouri University of	Rui Ferreira (Universidade de Lisboa) -
Science and Technology) - Chair	Chair
Mário Bessa (Universidade da Beira Interior)	António Bento (Universidade da Beira
Zuzana Dosla (Masaryk University)	Interior)
Saber Elaydi (Trinity University)	Gastão Bettencourt (Universidade da Beira
Stefan Hilger (Katholische Universität	Interior)
Eichstätt-Ingolstadt)	Pedro Patrício (Universidade da Beira
Donal O'Regan (National University of	Interior)
Ireland)	César Silva (Universidade da Beira Interior)
César Silva (Universidade da Beira Interior)	Sandra Vaz (Universidade da Beira Interior)
Chris Tisdell (University of New South	Hélder Vilarinho (Universidade da Beira
Wales)	Interior)



The 22nd International Conference on Difference Equations and Applications

ICDEA2016 July 24-29, Osaka, Japan

THE 22ND INTERNATIONAL CONFERENCE ON DIFFERENCE EQUATIONS AND APPLICATIONS WILL BE HELD IN OSAKA, JAPAN, FROM JULY 24 TO 29, 2016. THE CONFERENCE IS ORGANIZED BY OSAKA PREFECTURE UNIVERSITY (OPU), UNDER THE AUSPICES OF THE INTERNATIONAL SOCIETY OF DIFFERENCE EQUATIONS (ISDE) AND OKAYAMA UNIVERSITY OF SCIENCE (OUS).

THE PURPOSE OF THE CONFERENCE IS TO BRING TOGETHER BOTH EXPERTS AND NOVICES IN THE THEORY AND APPLICATIONS OF DIFFERENCE EQUATIONS AND DISCRETE DYNAMICAL SYSTEMS.

THE PREVIOUS CONFERENCES WERE HELD IN THE CITIES OF <u>BIALYSTOK</u> (POLAND) IN 2015, <u>WUHAN</u> (CHINA) IN 2014, <u>MUSCAT</u> (OMAN) IN 2013, <u>BARCELONA</u> (SPAIN) IN 2012, TROIS-RIVIERES (QUEBEC, CANADA) IN 2011, RIGA (LATVIA) IN 2010, ESTORIL (PORTUGAL) IN 2009, ISTANBUL (TURKEY) IN 2008, LISBON (PORTUGAL) IN 2007, KYOTO (JAPAN) IN 2006, MUNICH (GERMANY) IN 2005, LOS ANGELES (CALIFORNIA, USA) IN 2004, BRNO (CZECH REPUBLIC) IN 2003, CHANGSHA (CHINA) IN 2002, AUGSBURG (GERMANY) IN 2001, TEMUCO (CHILE) IN 2000, POZNAN (POLAND) IN 1998, TAIPEI (TAIWAN) IN 1997, VESZPRÉM (HUNGARY) IN 1995 AND SAN ANTONIO (TEXAS, USA) IN 1994.

### **INVITED SPEAKERS**

- Jim M. Cushing (University of Arizona, USA)
- Saber Elaydi (Trinity University, USA)
- Shandelle M. Henson (Andrews University, USA)
- **Ryusuke Kon** (University of Miyazaki, Japan)
- Nguyen Van Minh (University of Arkansas at Little Rock, USA)
- Christian Pötzsche (Alpen-Adria Universität Klagenfurt, Austria)
- Sebastian J. Schreiber (University of California, USA)
- Stephan A. van Gils (University of Twente, Netherland)
- Jianshe Yu (Guangzhou University, China)
- Weinian Zhang (Sichuan University, China)

#### Scientific Committee:

Linda Allen (Texas Tech University, USA) Chair Meng Fan (Northeast Normal University, China) Małgorzata Guzowska (University of Szczecin, Poland) Hideaki Matsunaga (Osaka Prefecture University, Japan) Stefan Siegmund (Technische Universität Dresden, Germany)

#### Organizing Committee:

Yoshihiro Hamaya (Okayama University of Science) <u>Hideaki Matsunaga</u> (Osaka Prefecture University) Chair Masakazu Onitsuka (Okayama University of Science) Naoto Yamaoka (Osaka Prefecture University)

#### More information: http://www.atalacia.com/icdea2016/osaka/index.html

# PODE 2015 IN RIGA, LATVIA, MAY 17-20, 2016.

This conference continues in the line of other PODE workshops: Laufen (Germany) PODE 2007, Laufen (Germany) PODE 2008, Bedlewo (Poland) <u>PODE 2009</u>, Xanthi (Greece) PODE 2010, Dublin (Ireland) <u>PODE 2011</u>, Richmond (Virginia, USA) PODE 2012, Bialystok (Poland) <u>PODE 2013</u>, Izmir (Turkey) <u>PODE 2014</u>, Covilhã (Portugal) <u>PODE 2015</u>.

This conference, held under the auspicies of the <u>International Society for Difference Equations</u>, aims to be a forum where researchers can share their work and discuss the latest developments in the areas of difference equations, discrete dynamical systems and their applications.

Riga, the capital of Latvia, is the pearl both of Latvia and the whole of the Baltics. Riga is included in the UNESCO World Cultural and Natural Heritage list. It is located in the central part of the country, on the south coast of the Gulf of Riga, at the mouth of our largest river, the Daugava. Riga is home for more than 700,000 inhabitants and is the largest city in the Baltic State.

#### Scientific Committee:

Christian Poetzsche, Alpen-Adria Universitaet Klagenfurt, Austria, Chair,

Andrejs Reinfelds, Latvijas Universitāte, Latvia, Co-Chair, Inese Bula, Latvijas Universitāte, Latvia.

Martin Bohner, Missouri University of Science and Technology, USA,

Josef Diblik, Vysoke Učeni Technicke v Brne, Czech Republic, Saber Elaydi, Trinity University, USA,

Michal Misiurewicz, Indiana University, USA,

Ewa Schmeidel, Uniwersytet w Bialymstoku, Poland, Stefan Siegmund, TU Dresden, Germany,

#### Cesar M. Silva, Universidade da Beirainterior, Portugal.

#### **Organizing Committee:**

Inese Bula (University of Latvia) - Chair, Maruta Avotiņa (University of Latvia) Co-Chair, Aija Aņisimova (University of Latvia), Alina Gleska (Poznan University of Technology), Michael A. Radin (Rochester Institute of Technology), Andrejs Reinfelds (University of Latvia), Felix Sadyrbaev (Daugavpils University), Dzintra Šteinberga (University of Latvia) Agnese Šuste (University of Latvia)

# More information: <u>http://www.lu.lv/pode2016/</u>



#### **ISDE SPONSORING MEMBERS 2015**



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Martin Bohner Department of Mathematics and Statistics Missouri S&T Rolla,Missouri, USA



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Vlajko L. Kocic Department of Mathematics Xavier University of Louisiana LA, USA



Willie E. Taylor Department of Mathematics Texas Southern University Houston,TX, USA

#### **ISDE CALENDAR**

09-12 May 2016, **The International Meeting on Applied Mathematics in Errachidia 2016**, will take place in Errachidia, Morocco. Informations: https://sites.google.com/site/imamerrachidia2016/home

17-20 May 2016, **PODE 2015**, will take place in the Latvijas Universitate in Riga, Latvia. Informations: <u>http://www.lu.lv/pode2016/</u>

8-11 June 2016, **7th Podlasie Conference on Mathematics** (7th PCM) will take place in Białystok, Poland, in the new campus of the University of Bialystok. PCM. Informations: <u>www.7PCM.uwb.edu.pl</u>

24-29 July 2016, **The International Conference on Difference Equations and Applications** (ICDEA 2016) will take place in the Osaka Prefecture University in Osaka, Japan. Information: <u>http://www.atalacia.com/icdea2016/osaka/index.html</u>

19-25 September 2016, **The International Conference of Numerical Analysis and Applied Mathematics 2016** (ICNAAM 2016) will be at Rhodes, Greece, Rhodos Palace Hotel. Information: <u>http://icnaam.org/</u> and <u>https://sites.google.com/site/sandrapinelas/sdde-a-2016</u>



#### **BOOKS AUTHORED BY ISDE MEMBERS**

Difference Equations, Discrete Dynamical Systems and Applications, ICDEA, Wuhan, China, July 21-25, 2014, Editors: Martin Bohner, Yiming Ding, Ondřej Došlý, ISBN: 978-3-319-24745-8 (Print) 978-3-319-24747-2 (Online), <u>http://link.springer.com/book/10.1007%2F978-3-319-24747-2</u>

**POSITIVE DYNAMICAL SYSTEMS IN DISCRETE TIME. Theory, Models, and Applications,** by Ulrich Krause, De Gruyter Studies in Mathematics 62, 2015, http://www.degruyter.com/view/product/430890

**Computational Methods in the Fractional Calculus of Variations,** by Ricardo Almeida, Shakoor Pooseh and Delfim F M Torres, Imperial College Press, 2015, http://www.worldscientific.com/worldscibooks/10.1142/p991

**Advanced Methods in the Fractional Calculus of Variations,** by Malinowska, Agnieszka B., Odzijewicz, Tatiana, and Torres, Delfim F.M, Springer, 2015, http://www.springer.com/mathematics/book/978-3-319-14755-0

**Difference Equations by Differential Equation Methods,** by Hydon Peter, Cambridge University Press 2015, http://www.kent.ac.uk/smsas/personal/ph282/pub.htm

Infinite-horizon optimal control in the discrete-time framework by Joel Blot and Naila Hayek, SpringerBriefs in Optimization, 2014, 124 pages

**Geometric Theory of Discrete Nonautonomous Dynamical Systems** by Pötzsche, Christian, Springer | 2010 | ISBN: 3642142575 | 398 pages | File type: PDF | 3,2 mb

Quantum Variational Calculus, Series: SpringerBriefs in Electrical and Computer Engineering, Subseries: SpringerBriefs in Control, Automation and Robotics, by Agnieszka B. Malinowska and Delfim F. M. Torres, Series Editors: Basar, Tamer; Bicchi, Antonio; Krstic, Miroslav. Published by: Springer, 2014. Electronic ISBN: 978-3-319-02747-0 Print ISBN: 978-3-319-02746-3 DOI:10.1007/978-3-319-02747-0

Almost Automorphic Type and Almost Periodic Type Functions in Abstract Spaces by Toka Diagana, New York Springer. 2013, 303 pages.

**Difference and Differential with Applications in Queueing Theory** by Aliakbar Montazer Haghighi and Dimitar P. Mishev, John Wiley & Sons, 2013, 424 pages.

A.A.Martynyuk, **Stability Analysis via Matrix Functions Method**, 2013 Part I, 262p. and Part II, 130p. <u>www.bookboon.com</u> Section Statistics and Mathematics.

A.Martynyuk, L.Chernetskaya and V.Martynyuk, **Weakly Connected Nonlinear Systems. Boundedness and Stability of Motion**, 2013, CRC Press, Taylor and Francis, 212p., Zbl pre06110079.

**Stability Theory of Solutions of Dynamic Equations on Time Scales**, by A.A. Martynyuk, Kiev: Phoenix, 2012, 277 pages.

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Allan Peterson University of Nebraska, Lincoln, Nebraska, US

#### **GOALS OF THE SOCIETY**

To promote difference equations and discrete dynamical systems, defined broadly, as one of the fundamental subjects in Mathematics.

To promote discrete models as models of premiere mathematical importance in the natural sciences, engineering, economics, etc.

To coordinate activities in the area of difference equations such as organizing conferences, annual meetings, workshops, special sessions, etc.

To lend support to researchers in difference equations from developing countries and those who need help by making available copies of research articles, lecture notes, technical reports and books.

To promote the publication of books, monographs, lecture notes and expository articles in the area of difference equations.



