

CONFERENCE PROGRAM

**ADVANCES IN OPERATOR THEORY WITH APPLICATIONS TO  
MATHEMATICAL PHYSICS**

CHAPMAN UNIVERSITY,  
NOVEMBER 12-16, 2018

ORGANIZERS: PROFS. DANIEL ALPAY, JUSSI BEHRNDT, FABRIZIO  
COLOMBO AND DANIELE STRUPPA.

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Monday, November 12, 2018

10h30-11h00 Opening:

- Prof. Daniele Struppa, President
- Prof. Glenn Pfeiffer , Provost
- Prof. Andrew Lyon, Dean of the Schmid College
- Prof. Adrian Vajiac, Program Director, Mathematics

11h00-11h30: Tryphon Georgiou, *Wasserstein geometry and applications.*

11h30-12h00: Vladimir Bolotnikov, *Carathéodory-Fejér type interpolation problems for Stieltjes-class functions.*

Lunch break

14h00-14h30: Daniele Struppa, *Superoscillations and continuous endomorphisms on spaces of entire functions*

14h30-15h00: Carsten Trunk, *Operator based approach to  $\mathcal{PT}$  symmetric problems on wedge shaped contours.*

15h00-15h30: Alain Yger, *About Cauchy-Weil formula and Bergman-Weil  $f$ -adic expansions*

Coffee break

16h00-16h30: Sascha Trostorff, *Well-posedness for a general class of differential inclusions.*

16h30-17h00: Mihaela Vajiac, *Complex ternary algebra and applications.*

Tuesday, November 13, 2018

09h30-10h00: Joe Ball, *Internal and input/output system stability: the free noncommutative setting.*

10h00-10h30: Mamadou Mboup, *A hybrid distribution for heavy tailed data modeling.*

10h30-11h00: Izchak Lewkowicz, *State-space realization of tensor product or composition of rational functions.*

Coffee break

11h20 11h50: Laurent Baratchart, *Inverse potential problems in divergence form and total variation regularization.*

11h50-12h20: Vladimir Derkach, *Inverse problem for generalized de Branges matrices.*

Lunch break

14h15-14h45: Irene Sabadini, *On some Radon-type transforms in hypercomplex analysis.*

14h45-15h15: Peter Schlosser, *Propagators of the Schrödinger equation: Time evolution of superoscillations.*

15h15-15h45: Andrii Khrabustovskyi, *Singular Schrödinger operators with predefined spectrum.*

Coffee break

16h15-16h45: Mordecai Waegell, *Generalizations of Quaternions Based on the Physics of  $N$  qubits.*

16h45-17h15: Motke Porat, *Realizations of Non Commutative Rational Functions.*

Wednesday, November 14, 2018

09h30-10h00: Rainer Picard, *Some Electromagnetic Wave Propagation Models for Complex Media: An Operator Theoretical Perspective.*

10h00-10h30: David Kimsey, *On the indefinite multidimensional truncated moment problem.*

10h30-11h00: Juliette Leblond, *Inverse source problems and approximation, with applications.*

Coffee break

11h20-11h50: Justin Dressel, *Dual-symmetric Electromagnetism, a Clifford-algebraic approach.*

11h50-12h20: Ismael Paiva, *Stochastic processes and their derivatives in the Grassmann algebra.*

Afternoon free

Thursday, November 15, 2018

09h30-10h00: Victor Vinnikov, *TBA.*

10h00-10h30: Paula Cerejeiras, *Operator theory for discrete Clifford analysis.*

10h30-11h00: Palle Jorgensen,  *$W$ -Markov measures, transfer operators, wavelets and multiresolutions.*

Coffee break

11h20-11h50: Swanhild Bernstein, *Quasi-monogenic functions and Riesz-Hilbert transforms*.

11h50-12h20: Thomas Hempfling, *News from Publishing*.

Lunch break

14h15-14h45: Amir Kalev, *The power of being positive (semi-definite)*.

14h45-15h15: Dan Volok, *Interpolation problems for discrete analytic functions*.

15h15-15h45: Kamal Diki, *On slice polyanalytic functions of a quaternionic variable*.

Coffee break

16h15-16h45: Marcus Waurick, *Nonlocal homogenisation problems see the boundary conditions*.

16h45-17h15: Baruch Schneider, *On the Hilbert formulas on the unit circle for  $\alpha$ -hyperholomorphic function theory*.

Conference dinner

Friday, November 16, 2018

09h30-10h00: Ahmed Sebbar, *On a certain trigonometric series*.

10h00-10h30: Ariel Pinhas, *Vessel theory over Pontryagin spaces with applications to system theory*.

10h30-11h00: Andrey Melnikov, *A solution of the Boussinesq equation using evolutionary vessels*.

Coffee break

11h20-11h50: Fabrizio Colombo, *The  $S$ -spectrum approach to fractional diffusion processes*.

11h50-12h20: Roman Buniy, *Lie algebraic solution of the Schrödinger equation*.

Lunch break

14h15-14h45: Jussi Behrndt, *The Birman-Schwinger principle for generalized eigenvectors*.

14h45-15h15: Adrian Vajiac, *Script geometry*.

Coffee break

15h45-16h15: Daniel Alpay, *Positivity, rational Schur functions, Blaschke factors and other related results in the Grassmann algebra*.