

4th International Conference on Optical Angular Momentum  
ICOAM17, Anacapri (IT) , 18-22 September 2017ICOAM-17

Preliminary programme

<b>Monday 18 September</b>	
09.00-10.00	Registration
10.00-10.05	<b>Welcome address</b>
<b>Session 1. Foundations</b>	
10.05-10.50	<b>Keynote lecture:</b> Orbital Angular Momentum: 25 years of ideas later <i>Miles Padgett, University of Glasgow, UK</i>
10.50-11.20	Coffee break
11.20-11.50	Can laser optics resolve the particle physics angular momentum controversy? <i>Elliot Leader, Imperial College London, UK</i>
11.50-12.10	Modeling of OAM beams: theoretical investigations and experimental realizations <i>Giuseppe Vallone, University of Padova, Dep. of Information Engineering, Italia</i>
12.10-12.30	Optimal birefringent masks for producing bottle fields <i>Miguel A. Alonso, University of Rochester, USA</i>
12.30-13.00	The half-quantization of a total optical angular momentum <i>Paul Eastham, Trinity College Dublin, Ireland</i>
13.00-14.30	<b>Lunch break</b>
<b>Session 2. Foundations &amp; Interactions</b>	
14.30-15.00	Knotted optical singularities in free space: designed, random and accidental <i>Mark Dennis, University of Bristol, UK</i>
15.00-15.30	Photons in the lowest Landau level: from topological invariants to singular surfaces <i>Nathan Schine, University of Chicago, USA</i>
15.30-16.00	Excitation of an atomic transition with a vortex beam or: how atoms learned to stop worrying and love the twist <i>Christian Schmiegelow, Universitat Mainz, Germany</i>
16.00-16.30	<b>Coffee break</b>
16.30-16.50	Spin-orbit coupling and circular dichroism in twisted-light absorption by atoms <i>Andrei Afanasev, The George Washington University, USA</i>
16.50-17.20	Optical wings that rock, roll, and orbit <i>Alexandra Artusio-Glimpse, NIST, USA</i>
17.20-17.40	A measure of flow vorticity with helically phased light <i>Carmelo Rosales-Guzman, ICFO-Institut de Ciencies Fotoniques, Spain</i>
<b>Welcome reception</b>	

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**Tuesday 19 September**

**Session 3. Electrons & Other Particles**

- 09.00-09.30 Measuring orbital angular momentum spectrum of electron beams  
*Ebrahim Karimi, University of Ottawa, Canada*
- 09.30-09.50 Generating twisted electron beams with arbitrary topological charge  
*Amir Hossein Tavabi, Forschungszentrum Jülich, Germany*
- 09.50-10.20 Orbital angular momentum mode selection using rotationally symmetric superposition of chiral states with application to vortex generation in matter waves  
*Jun Yuan, University of York, UK*
- 10.20-10.40 Large electron vortex beams interacting with vertical magnetic fields: a “vertical” Aharonov-Bohm experiment?  
*Vincenzo Grillo, CNR, Italy*
- 10.40-11.10 Coffee break
- 11.10-11.30 Exploring the inelastic interaction between phase-shaped electron beams and plasmonics resonances  
*Giulio Guzzinati, EMAT, University of Antwerp, Belgium*
- 11.30-12.00 Holography of twisted neutron waves and their spin-orbit coupling  
*Dmitry Pushin, University of Waterloo, Canada*
- 12.00-12.20 Generation of gamma-ray vortex beams using inverse Compton scattering  
*Yoshitaka Taira, National Institute of Advanced Industrial Science and Technology (AIST), Japan*
- 12.20-12.40 Vortex transmutations in polariton fluids  
*Lorenzo Dominici, CNR NANOTEC, Istituto di Nanotecnologia, Italy*
- 12.40-13.00 Taming Orbital Angular Momentum Entanglement with Mutually Unbiased Measurements  
*Mehul Malik, University of Vienna & Austrian Academy of Sciences, Austria*
- 13.00-14.30 Lunch break
- Session 4. Spin-orbit & Quantum**
- 14.30-15.00 The quantum control of photonic entanglement with a single sub-wavelength structure  
*Gabriel Molina-Terriza, Macquarie University, Australia*
- 15.00-15.30 Optical momentum, spin, and angular momentum in dispersive and inhomogeneous media  
*Kostantin Bliokh, RIKEN, Japan*
- 15.30-16.00 The concept and the prospects of chiral quantum optics  
*Peter Lodhal, Niels Bohr Institute, University of Copenhagen, Denmark*
- 16.00-16.30 Coffee break
- 16.30-18.00 **Poster session 1**

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**Wednesday 20 September**

**Session 5. Quantum**

09.00-09.45	<b>Keynote lecture:</b> New horizons for photonic orbital angular momentum in quantum phenomena <i>Anton Zeilinger, University of Vienna &amp; Austrian Academy of Sciences, Austria</i>
09.45-10.05	Photonic quantum information processing with orbital angular momentum <i>Xi-Lin Wang, University of Science and Technology of China, China</i>
10.05-10.35	Simultaneous entanglement swapping of multiple orbital angular momentum states of light <i>Jonathan Leach, Heriot-Watt University, UK</i>
10.35-10.55	On computer-designed quantum experiments <i>Mario Krenn, Vienna Center for Quantum Science and Technology (VCQ), University of Vienna, Austria</i>
10.55-11.20	Coffee break
11.20-11.40	Tomography of a quantum channel with classical light <i>Bienvenu Ndagano, University of the Witwatersrand, South Africa</i>
11.40-12.10	The quantum entanglement of angular momentum states with quantum numbers up to 10,010 <i>Robert Fickler, University of Ottawa, Canada</i>
12.10-12.40	Quantum causality <i>Jacquiline Romero, University of Queensland, Australia</i>
12.40-13.00	Spatial Bell-state generation without transverse mode subspace postselection <i>Egor Kovalkov, M. V. Lomonosov Moscow State University, Russia</i>
	Free afternoon (optional tour)

Preliminary programme

<b>Thursday 21 September</b>	
<b>Session 6. Nonlinear, Ultrafast &amp; Propagation</b>	
09.00-09.45	<b>Keynote lecture: OAM law</b> <i>Halina Rubinsztein-Dunlop, University of Queensland, Australia</i>
09.45-10.05	Synthesis, characterization and control of extreme ultraviolet attosecond light springs <i>Antoine Camper, CERN, Switzerland</i>
10.05-10.35	Optical vortices at ultrahigh intensity <i>Adrien Denoeud, Centre CEA de Saclay, France</i>
10.35-11.10	Coffee break
11.10-11.40	Control of nonlinear beam propagation using fully-structured light <i>Alison Yao, University of Strathclyde, UK</i>
11.40-12.10	Hanbury Brown and Twiss interferometry with twisted light <i>Robert Boyd, University of Ottawa, Canada</i>
12.10-12.40	Spatio-temporal optical vortices <i>Howard Milchberg, University of Maryland, USA</i>
12.40-13.00	Orbital angular momentum mixing in type II second harmonic generation <i>Antonio Zelaquett Khoury, Universidade Federal Fluminense, Brazil</i>
13.00-14.30	Lunch break
<b>Session 7. Technology, Communication &amp; OAM Generation</b>	
14.30-15.00	On-chip noninterference angular momentum multiplexing of broadband light <i>Min Gu, Royal Melbourne Institute of Technology, Australia</i>
15.00-15.30	Orbital angular momentum microlaser <i>Natalia Litchinitser, University of Buffalo, USA</i>
15.30-16.00	OAM in optical fibers: similarities with, and differences from, OAM in free space <i>Siddharth Ramachandran, Boston University, USA</i>
16.00-16.30	Coffee break
16.30-18.00	<b>Poster session 2</b>
19.30	<b>Social dinner</b>

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**Friday 22 September**

**Session 8. Spin-orbit**

- 09.00-09.45 **Keynote lecture:** Stable and unstable Airy-related caustics and beams  
*Michael Berry, University of Bristol, UK*
- 09.45-10.05 Classification of the known effects of the spin-orbit interactions of light and prediction of new effects  
*Nataliya Kundikova, Institute of Electrophysics of UD RAS and South Ural State University, Russia*
- 10.05-10.35 Transverse spin of light and nanoscopic position sensing  
*Peter Banzer, Max Planck Institute for the Science of Light, Germany*
- 10.35-11.10 Coffee break
- 11.10-11.40 Higher-order Poincaré sphere beams from the source  
*Darryl Naidoo, CSIR National Laser Centre, South Africa*
- 11.40-12.00 Focussing of vector vortex beams from Fresnel cones  
*Sonja Franke-Arnold, University of Glasgow, UK*
- 12.00-12.30 Lateral optical and Casimir forces enabled by spin-orbit locking  
*Francisco Rodriguez Fortuño, King's College London, UK*
- 12.30-12.50 Macroscopic observation of helicity-controlled lateral optical forces  
*Hernando Magallanes, Université de Bordeaux, France*
- 12.50-14.30 Lunch break
- Session 9. Spin-orbit & OAM Generation**
- 14.30-15.00 Cholesteric liquid crystal diffractive optical elements for optical vortex generation  
*Hiroyuki Yoshida, Osaka University, Japan*
- 15.00-15.20 Efficient vortex generation in sub-wavelength epsilon-near-zero slabs  
*Alessandro Ciattoni, CNR-SPIN, Italy*
- 15.20-15.40 Tailored singular vector beams in the paraxial and non-paraxial regime  
*Eileen Otte, Institute of Applied Physics, Germany*
- 15.40-16.00 Diffractive optics for OAM-mode division multiplexing  
*Gianluca Ruffato, University of Padova, Italy*
- 16.00-16.20 Monstar patterns of spatially-variable polarization  
*Enrique Galvez, Colgate University, USA*
- 16.20-16.30 **Closing remarks**