

Special Research Program



**Coherent Optical Metrology Beyond
Electric-Dipole-Allowed Transitions**

Symposium

24th – 26th September 2025

Schedule

Schedule SFB Symposium 2025

Wednesday, 24th September 2025

Welcome and workshop in seminar room **2.08**

2nd floor

IQOQI Vienna

Boltzmanngasse 3, 1090 Vienna

	Time	Program
Boltzmanngasse 3	09:30 – 09:45	Coffee and snacks
	09:45 – 10:00	Welcome Oliver Heckl , University of Vienna
	10:00 – 13:00	Active Bystander Workshop by ZARA association (including coffee breaks when needed)
	13:00 – 13:30	<i>Estimated time to reach Photonics Institute</i>
Gusshausstraße 27 - 29	13:30 – 14:30	Lunch break In new lab of Group P4 Photonics Institute (TU Wien), Gusshausstraße 27 – 29, 1040 Vienna
	14:30 – 15:30	Lab tour Photonics Institute (TU Wien), Gusshausstraße 27-29, 1040 Vienna
	15:30 – 16:15	<i>Estimated time to reach Institute of Atomic and Subatomic Physics</i>
Stadionallee 2	16:15 – 17:15	Lab tour Institute of Atomic and Subatomic Physics (TU Wien), Stadionallee 2, 1020 Vienna
	17:15 – 18:15	Mid-infrared frequency comb Fourier transform spectroscopy for laboratory astrophysics Lucile Rutkowski , Université de Rennes Helmut Rauch Lecture Hall Institute of Atomic and Subatomic Physics (TU Wien), Stadionallee 2, 1020 Vienna
	18:15 – 18:20	Short introduction from our mentor Chi Zhang , University of Vienna Helmut Rauch Lecture Hall Institute of Atomic and Subatomic Physics (TU Wien), Stadionallee 2, 1020 Vienna
	19:00 – 20:30	SFB Women's Mentoring Dinner MOTTO am Fluss , Franz-Josefs-Kai 2, 1010 Vienna

Thursday, 25th September 2025

All talks held in **Christian-Doppler lecture hall** (3355)

3rd floor

University of Vienna

Boltzmannngasse 5, 1090 Vienna

	Time	Program
Boltzmannngasse 5	09:05 – 09:15	Welcome & Symposium Overview Oliver Heckl , University of Vienna
	09:15 – 10:15	Precision spectroscopy of molecular hydrogen Wim Ubachs , VRIJE Universiteit Amsterdam
	10:15 – 11:15	SYRF poster session With coffee and snacks
	11:15 – 12:15	Challenging QED with atomic Hydrogen Thomas Udem , Max-Planck-Institut für Quantenoptik
	12:15 – 13:30	Lunch break Free time for regular Symposium attendees PIs, Advisory Board and Mentors have lunch at Shoukou , Spitalgasse 31, 1090 Vienna
Boltzmannngasse 5	P2 Group OAM-enabled transitions Presentation	
	13:30 – 14:30	13:30 – 13:50 Introduction Oliver Heckl , University of Vienna
		13:50 – 14:10 The R-Index metric for evaluating OAM Content and mode purity in optical fields Monika Bahl , University of Vienna
		14:10 – 14:30 Orbital Angular Momentum-Enabled Transitions in Molecules: Experimental Challenges and Advances Tom Jungnickel , University of Vienna
	14:30 – 15:30	P3 Group Interactions of Molecules with Twisted Light Presentation Talks by Mikhail Lemeshko , Mateja Hrast , Georgios Koutentakis , Mikhail Maslov , Institute of Science and Technology Austria
	15:30 – 16:15	Sports/Movement break (Possible options: Ping-pong/Soccer/Basketball at Arne-Karlsson-Park, Table Football in house, Walk around Liechtensteinpark)
	P4 Group Ultrafast tailored light Presentation	
	16:15 – 17:15	16:15 – 16:25 Introduction Andrius Baltuška , TU Wien
		16:25 – 16:40 Technical Developments of Multi-Pulse CPA Vinzenz Stummer , TU Wien
		16:40 – 16:55 Laser system for the excitation of the Th-229 nucleus Aref Imani , TU Wien
		16:55 – 17:15 Generation of Azimuthally and Radially Polarized Pulses for Selective Excitation of Optical Magnetic and Electric Dipole Transitions Elizaveta Gangrskaja , TU Wien
	17:15 – 18:15	Lab tour Institute of Physics (UniVIE), Boltzmannngasse 5, 1090 Vienna
	18:30 – 20:00	SFB Dinner Melker Stiftkeller , Schottengasse 3, 1010 Wien

Friday, 26th September 2025

All talks held in **Christian-Doppler lecture hall** (3355)

3rd floor

University of Vienna

Boltzmanngasse 5, 1090 Vienna

	Time	Program	
Boltzmanng. 5	09:10 – 09:15	Welcome Oliver Heckl , University of Vienna	
	09:15 – 10:30	P5 Group ²²⁹ Th nuclear spectroscopy in solid-state Presentation	
		09:15 – 09:35	Current status of Thorium-229 laser excitation Thorsten Schumm , TU Wien
		09:35-09:55	Towards two photon excitation of the Th229 clock isomer Ira Morawetz , TU Wien
		09:55 – 10:30	Development of crystal growth techniques for the Th229 solid state clock Luca Toscani De Col , TU Wien
	10:30 – 11:00	Coffee break	
	11:00 – 12: 15	P6 Group Nuclear excitation with twisted light combs Presentation	
		11:00 – 11:10	Introduction Adriana Pálffy-Buß , Julius-Maximilians-Universität Würzburg
		11:10 – 11:30	Nuclear photo excitation of the ²²⁹ Th isomer using vortex beams Tobias Kirschbaum , Julius-Maximilians-Universität Würzburg
		11:30 – 11:50	Coherent vortex pulse propagation in ²²⁹ Th:CaF2 Alexander Franz , Julius-Maximilians-Universität Würzburg
		11:50 - 12:15	Electronic Bridge schemes in ²²⁹ Th-doped LiCAF and LiSAF Tobias Kirschbaum , Julius-Maximilians-Universität Würzburg
	12:30 – 13: 30	SFB Lunch Cocore , Berggasse 14, 1090 Vienna	
Boltzmanngasse 5	13: 30 – 13:45	Best poster prize award and final remarks	
	13:45 – 14:45	PI Discussion with Expert Advisory Board on future SFB goals Social Room (3520), 5 th floor	13:45 – 14:00 SYRF voting of the student representatives
			14:00 – 18:00 SYRF Soft Skill Workshop: Scientific writing with AI- based tools Réka Mihálka , ETH Zürich