

## Metal and Material Physics Division Fachverband Metall- und Materialphysik (MM)

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### Overview of Invited Talks and Sessions

(Lecture rooms H38, H39, H51, H52, and H53; Poster B3)

#### Invited Talks

MM 16.1	Tue	9:30–10:00	H38	<b>Critical stresses in intermittent plasticity and the transition to macroscopic yield</b> — •PETER DERLET, ROBERT MAASS
MM 27.1	Wed	9:30–10:00	H38	<b>The secret of shear bands</b> — •HARALD RÖSNER
MM 38.1	Wed	15:00–15:30	H38	<b>Models for adhesion, friction and wear across the scales</b> — •LARS PASTEWKA, PETER GUMBSCH, MICHAEL MOSELER, GIANPIETRO MORAS, ANKE PEGUIRON, MARK ROBBINS
MM 44.1	Wed	18:30–19:00	H38	<b>Design of ductile Mg alloys based on combined high resolution electron microscopy experiments and ab initio calculations</b> — •STEFANIE SANDLÖBES, MARTIN FRIÁK, ZONGRUI PEI, TALAL AL-SAMMAN, SANDRA KORTEKERZEL, JÖRG NEUGEBAUER, DIERK RAABE
MM 45.1	Wed	19:00–19:30	H38	<b>Computer simulation of bulk-metallic glasses under shear: From inhomogeneous flow patterns to mechanical properties</b> — •JUERGEN HORBACH, GAURAV PRAKASH SHRIVASTAV, PINAKI CHAUDHURI
MM 47.1	Thu	9:30–10:00	H38	<b>Nondestructive micro/nanostructure analysis using diffraction</b> — •MATTEO LEONI
MM 57.1	Thu	15:00–15:30	H38	<b>Virtual diffraction as a tool to investigate nanostructured materials</b> — •JÜRGEN MARKMANN

#### Invited talks of the joint symposium SYCE

See SYCE for the full program of the symposium.

SYCE 1.1	Mon	15:00–15:30	H1	<b>Multicaloric effects in metamagnetic Heusler materials</b> — •ANTONI PLANES
SYCE 1.2	Mon	15:30–16:00	H1	<b>Multicaloric effect in biological systems: a case of nerve action</b> — •MATJAZ VALANT, LAWRENCE J. DUNNE, ANNA-KARIN AXELSSON, FLORIAN LE GOUPIL, GEORGE MANOS
SYCE 1.3	Mon	16:00–16:30	H1	<b>Optimizing the electrocaloric effect by first-principles simulations: The role of strain and defects</b> — •ANNA GRÜNEBOHM
SYCE 1.4	Mon	16:45–17:15	H1	<b>Giant inverse barocaloric effects in ferroelectric ammonium sulphate</b> — POL LLOVERAS, ENRIC STERN-TAULATS, MARIA BARRIO, JOSEP LLUIS TAMARIT, SAM CROSSLEY, WEI LI, VLADIMIR POMJAKUSHIN, ANTONI PLANES, LLUIS MAÑOSA, NEIL MATHUR, •XAVIER MOYA
SYCE 1.5	Mon	17:15–17:45	H1	<b>TiNiCu-based thin films for elastocaloric cooling</b> — •ECKHARD QUANDT, CHRISTOPH CHLUBA

#### Invited talks of the joint symposium SYES

See SYES for the full program of the symposium.

SYES 1.1	Fri	9:30–10:00	H1	<b>Intrinsic Transport Coefficients and Momentum Space Berry Curvatures</b> — •ALLAN H MACDONALD
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SYES 1.2	Fri	10:00–10:30	H1	<b>Berry phase linked spin-orbit torques in Ferromagnetic and Antiferromagnetic systems</b> — ●JAIRO SINOVA
SYES 1.3	Fri	10:30–11:00	H1	<b>Transport in Topological Insulators and Topological Superconductors: In Search of Majorana Fermions</b> — ●EWELINA HANKIEWICZ
SYES 1.4	Fri	11:15–11:45	H1	<b>Engineering Topological Quantum States: From 1D to 2D.</b> — ●JELENA KLINOVAJA
SYES 1.5	Fri	11:45–12:15	H1	<b>Skyrmions – Topological magnetization solitons for future spintronics</b> — ●STEFAN BLÜGEL

## Sessions

MM 1.1–1.1	Mon	9:30–10:00	H38	Invited talk Olson
MM 2.1–2.4	Mon	10:15–11:45	H38	Topical session: Integrated computational materials engineering for design of new materials I
MM 3.1–3.5	Mon	10:15–11:45	H39	Interfaces I: Mechanical properties
MM 4.1–4.4	Mon	10:15–11:30	H52	Liquid and Amorphous Metals I: Glassy dynamics
MM 5.1–5.4	Mon	10:15–11:30	H53	Nanomaterials I: Mechanics
MM 6.1–6.6	Mon	11:30–13:00	H52	Liquid and Amorphous Metals II: Shear bands
MM 7.1–7.5	Mon	11:30–12:45	H53	Transport I: Electronic and thermal transport
MM 8.1–8.5	Mon	11:45–13:15	H38	Topical session: Integrated computational materials engineering for design of new materials II
MM 9.1–9.4	Mon	11:45–12:45	H39	Interfaces II: Segregation and embrittlement
MM 10.1–10.5	Mon	15:00–17:45	H1	SYCE: Caloric effects in ferroic materials
MM 11.1–11.7	Mon	15:45–18:00	H39	Topical session: Integrated computational materials engineering for design of new materials III
MM 12.1–12.7	Mon	15:45–17:45	H51	Frontiers of Electronic Structure Theory: Focus on Topology and Transport
MM 13.1–13.6	Mon	15:45–17:30	H52	Liquid and Amorphous Metals III: Mechanical properties
MM 14.1–14.6	Mon	15:45–17:30	H53	Transport II: Atomic and ionic transport
MM 15.1–15.39	Mon	18:00–20:00	Poster B3	Poster session I
MM 16.1–16.1	Tue	9:30–10:00	H38	Invited talk Derlet
MM 17.1–17.3	Tue	10:15–11:45	H38	Topical session: In-situ Microscopy with Electrons, X-Rays and Scanning Probes in Materials Science I
MM 18.1–18.4	Tue	10:15–11:45	H39	Topical session: Integrated computational materials engineering for design of new materials IV
MM 19.1–19.5	Tue	10:15–11:45	H52	Mechanical Properties I
MM 20.1–20.4	Tue	10:15–11:45	H53	Topical session: Caloric Effects in ferroic materials I - Magnetocalorics
MM 21.1–21.6	Tue	11:45–13:15	H38	Microstructure and Phase Transformations I
MM 22.1–22.7	Tue	11:45–13:30	H39	Topical session: Integrated computational materials engineering for design of new materials V
MM 23.1–23.6	Tue	11:45–13:15	H52	Mechanical Properties II
MM 24.1–24.5	Tue	11:45–13:15	H53	Topical session: Caloric Effects in ferroic materials II - Methods and Applications
MM 25.1–25.7	Tue	14:00–16:00	H24	Frontiers of Electronic Structure Theory: Focus on Topology and Transport I
MM 26.1–26.43	Tue	18:30–20:30	Poster B3	Poster session II
MM 27.1–27.1	Wed	9:30–10:00	H38	Invited talk Rösner
MM 28.1–28.4	Wed	10:15–11:45	H38	Topical session: In-situ Microscopy with Electrons, X-Rays and Scanning Probes in Materials Science II - Atomic structure and defects I
MM 29.1–29.5	Wed	10:15–11:45	H39	Topical session: Caloric effects in ferroic materials III - Electrocalorics
MM 30.1–30.4	Wed	10:15–11:30	H52	Structural Materials I
MM 31.1–31.5	Wed	10:15–11:45	H53	Functional materials I: Supercapacitors and batteries I
MM 32.1–32.10	Wed	10:30–13:00	H24	Frontiers of Electronic Structure Theory: Focus on Topology and Transport II
MM 33.1–33.4	Wed	11:45–13:15	H38	Topical session: In-situ Microscopy with Electrons, X-Rays and Scanning Probes in Materials Science III - Atomic structure and defects II

MM 34.1–34.3	Wed	11:45–12:45	H39	<b>Topical session: Caloric effects in ferroic materials IV - Heuslers</b>
MM 35.1–35.4	Wed	11:45–12:45	H52	<b>Structural Materials II</b>
MM 36.1–36.5	Wed	11:45–13:00	H53	<b>Functional materials II: Batteries II</b>
MM 37.1–37.12	Wed	15:00–18:30	H24	<b>Frontiers of Electronic Structure Theory: Focus on Topology and Transport III</b>
MM 38.1–38.1	Wed	15:00–15:30	H38	<b>Invited talk Pastewka</b>
MM 39.1–39.11	Wed	15:00–18:15	H40	<b>Biomaterials and Biopolymers I (joint session CPP/BP/MM)</b>
MM 40.1–40.6	Wed	15:45–18:00	H38	<b>Topical session: In-situ Microscopy with Electrons, X-Rays and Scanning Probes in Materials Science IV - Atomic structure and defects III</b>
MM 41.1–41.8	Wed	15:45–18:00	H52	<b>Methods in Computational Materials Modelling I: Ab initio thermodynamics</b>
MM 42.1–42.6	Wed	15:45–17:30	H53	<b>Functional materials III: Actuators, sensors and functional devices</b>
MM 43.1–43.7	Wed	18:15–20:30	Poster A	<b>Frontiers of Electronic-Structure Theory: Focus on Topology and Transport</b>
MM 44.1–44.1	Wed	18:30–19:00	H38	<b>Invited talk Sandloebes</b>
MM 45.1–45.1	Wed	19:00–19:30	H38	<b>Invited talk Horbach</b>
MM 46	Wed	19:45–20:45	H38	<b>Annual General Assembly of the MM Division</b>
MM 47.1–47.1	Thu	9:30–10:00	H38	<b>Invited talk Leoni</b>
MM 48.1–48.4	Thu	10:15–11:45	H38	<b>Topical session: In-situ Microscopy with Electrons, X-Rays and Scanning Probes in Materials Science V - Biological and Electronic Materials</b>
MM 49.1–49.5	Thu	10:15–11:30	H39	<b>Nanomaterials II: Synthesis</b>
MM 50.1–50.5	Thu	10:15–11:45	H53	<b>Methods in Computational Materials Modelling II: Microstructure evolution</b>
MM 51.1–51.9	Thu	10:30–13:15	H24	<b>Frontiers of Electronic Structure Theory: Focus on Topology and Transport IV</b>
MM 52.1–52.5	Thu	11:45–13:15	H38	<b>Topical session: In-situ Microscopy with Electrons, X-Rays and Scanning Probes in Materials Science VI - Structural transitions</b>
MM 53.1–53.5	Thu	11:45–13:00	H39	<b>Microstructure and Phase Transformations II</b>
MM 54.1–54.5	Thu	11:45–13:00	H52	<b>Biomaterials and Biopolymers II (Joint CPP/BP/MM)</b>
MM 55.1–55.5	Thu	11:45–13:00	H53	<b>Methods in Computational Materials Modelling III: Machine learning and statistics</b>
MM 56.1–56.13	Thu	15:00–18:15	H24	<b>Frontiers of Electronic Structure Theory: Focus on Topology and Transport V</b>
MM 57.1–57.1	Thu	15:00–15:30	H38	<b>Invited talk Markmann</b>
MM 58.1–58.5	Thu	15:00–16:15	H45	<b>Biomaterials and Biopolymers III (Joint Session with CPP/BP/MM)</b>
MM 59.1–59.8	Thu	15:45–18:30	H38	<b>Topical session: In-situ Microscopy with Electrons, X-Rays and Scanning Probes in Materials Science VII - Nanomaterials</b>
MM 60.1–60.5	Thu	15:45–17:00	H39	<b>Microstructure and Phase Transformations III</b>
MM 61.1–61.4	Thu	15:45–16:45	H52	<b>Functional materials IV: Batteries III</b>
MM 62.1–62.7	Thu	15:45–17:45	H53	<b>Methods in Computational Materials Modelling IV: Method development</b>
MM 63.1–63.5	Fri	9:30–12:15	H1	<b>Symposium on Frontiers of Electronic Structure Theory: Focus on Topology and Transport</b>

## Annual General Meeting of the Metal and Material Physics Division

Wednesday 19:45-20:45 H38