

## Magnetism Division Fachverband Magnetismus (MA)

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### Overview of Invited Talks and Sessions

(Lecture rooms H 0110, H 0112, H 1012, EB 202, EB 301, and EB 407; Poster A and C)

#### MA-organized plenary talks

PLV XI Thu 8:30–9:15 H 0105 **Emergent properties and functions of topological magnets** —  
•YOSHINORI TOKURA

#### INNOMAG e.V. Dissertationspreis 2018 / Ph.D. Thesis Prize

MA 14.1 Mon 15:00–15:25 H 0112 **On the magnetocaloric properties of Heusler compounds** — •TINO  
GOTTSCHALL  
MA 14.2 Mon 15:25–15:50 H 0112 **Topological Magnon Materials and Transverse Magnon Transport** —  
•ALEXANDER MOOK  
MA 14.3 Mon 15:50–16:15 H 0112 **Ferromagnet-Free Magnetoelectric Thin Film Elements** — •TOBIAS  
KOSUB  
MA 14.4 Mon 16:15–16:40 H 0112 **Optically induced ferro- and antiferromagnetic dynamics in the rare-  
earth metal dysprosium** — •NELE THIELEMANN-KÜHN

#### INNOMAG e.V. Diploma-/Master Prize 2018

MA 15.1 Mon 16:55–17:15 H 0112 **Magnetic particle mapping with magnetoelectric sensors for charac-  
terization of bioscaffolds** — •RON-MARCO FRIEDRICH  
MA 15.2 Mon 17:15–17:35 H 0112 **Uncovering Chiral and Topological Orbital Magnetism of Domain  
Walls and Skyrmions**  
— •FABIAN R. LUX  
MA 15.3 Mon 17:35–17:55 H 0112 **Unified description of high frequency magnetodynamics, and a new  
way of measuring the magnon contribution to the specific heat.** —  
•BENJAMIN ZINGSEM

#### Topical talks

MA 10.1 Mon 15:00–15:30 EB 301 **Structure, Energetics, and Deterministic Writing of Skyrmions in  
Thin Film Ferromagnets** — •FELIX BÜTTNER  
MA 19.8 Tue 11:30–12:00 EB 301 **Composite topological excitations in ferromagnet-superconductor  
heterostructures** — •KJETIL HALS  
MA 31.1 Wed 15:00–15:30 H 0110 **Magnonics, Quo Vadis?** — •VOLODYMYR KRUGLYAK  
MA 38.1 Thu 9:30–10:00 H 0110 **RKKY-induced Kondo breakdown near a magnetic quantum phase  
transition** — •JOHANN KROHA  
MA 46.1 Thu 15:00–15:30 H 0110 **Topological spin textures as spin-wave emitters** — •SEBASTIAN WINTZ

**PhD Symposium: Ultrafast spin-lattice interactions**

MA 17.1	Tue	9:35–10:20	H 1012	<b>Understanding spin and lattice interactions at ultrafast timescales</b> — •PETER M. OPPENEER
MA 17.2	Tue	10:25–10:40	H 1012	<b>Magnetic and Structural Dynamics in Antiferromagnetically Coupled Fe/Cr Superlattices</b> — •DANIEL SCHICK
MA 17.3	Tue	10:40–11:10	H 1012	<b>Spin-Lattice coupling in ultrafast magnetization dynamics</b> — •BERT KOOPMANS
MA 17.4	Tue	11:25–11:55	H 1012	<b>The role of spin-lattice interaction in optical control of magnetism</b> — •ALEXEY KIMEL
MA 17.5	Tue	11:55–12:10	H 1012	<b>Structural dynamics during laser-induced ultrafast demagnetization</b> — •EMMANUELLE JAL
MA 17.6	Tue	12:15–12:45	H 1012	<b>Driving magnetization precession by dynamical compressive and shear strain in a low-symmetry metallic film</b> — •ALEXANDRA M. KALASHNIKOVA
MA 17.7	Tue	12:45–13:15	H 1012	<b>Ultrafast Thermal Transport in Magnetic Heterostructures</b> — •RICHARD WILSON

**Focus sessions (invited talks only)****Nanomagnetism in the x-ray spotlight**

MA 2.1	Mon	9:30–10:00	H 1012	<b>Advanced X-ray Optics - Zone Plates, Kinoforms and Computer Generated Holograms</b> — •KAHRAMAN KESKINBORA
MA 2.2	Mon	10:00–10:30	H 1012	<b>Time-resolved imaging of nanoscale spin textures and spin waves</b> — •JÖRG RAABE
MA 2.3	Mon	10:30–11:00	H 1012	<b>Direct observation of magnetic droplet solitons</b> — •MARTINA AHLBERG
MA 2.4	Mon	11:15–11:45	H 1012	<b>Studying nanomagnets by XMCD PEEM</b> — •FLORIAN KRONAST
MA 2.5	Mon	11:45–12:15	H 1012	<b>A time-resolved view on magnetic domains and spin textures by x-ray holography</b> — •STEFAN EISEBITT

**Magnetism in Materials Science: Thermodynamics, Kinetics and Defects I**

MA 7.1	Mon	10:15–10:45	TC 010	<b>First principles many-body calculations for rare earth-based materials: present status and open challenges</b> — •SILKE BIERMANN
MA 7.5	Mon	11:45–12:15	TC 010	<b>We need perfect defects - challenging the Brown's paradox in permanent magnetism</b> — •OLIVER GUTFLEISCH
MA 7.6	Mon	12:15–12:45	TC 010	<b>Interplay of moment-volume and electron-phonon coupling in the itinerant electron metamagnet <math>\text{LaFe}_{13-x}\text{Si}_x\text{H}_y</math></b> — •MARKUS ERNST GRUNER

**Magnetism in Materials Science: Thermodynamics, Kinetics and Defects II**

MA 13.1	Mon	15:45–16:15	TC 010	<b>Ferromagnetic Nuclear Resonance for studying defects in multilayers and nanocomposites : Structure and magnetic properties</b> — •CHRISTIAN MÉNY
MA 13.5	Mon	17:30–18:00	TC 010	<b>Improving the finite-temperature description of magnetic materials</b> — •ANDERS BERGMAN

**Magnetism in Materials Science: Thermodynamics, Kinetics and Defects III**

MA 22.1	Tue	11:45–12:15	H 0106	<b>Grain boundary migration and grain growth in non-ferromagnetic metals under the impact of a magnetic field</b> — •DMITRI A. MOLODOV
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**Magnetic structurally and compositionally modulated nanowires and nanotubes**

MA 8.1	Mon	15:00–15:30	H 1012	<b>Multiple nanostructures based on anodized aluminium oxide templates</b> — •YONG LEI
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MA 8.3	Mon	15:45–16:15	H 1012	<b>Towards a three dimensional curvilinear magnonic transducer</b> — •JORGE A OTALORA
MA 8.4	Mon	16:15–16:45	H 1012	<b>Controlled domain wall propagation in cylindrical nanowires</b> — •CRISTINA BRAN
MA 8.5	Mon	17:00–17:30	H 1012	<b>Magnetic hardening of nanowires by sandwiching with antiferromagnets</b> — •ULF WIEDWALD
MA 8.7	Mon	17:45–18:15	H 1012	<b>Hybrid Magnetoelectric Nanowires for Nanorobotic Applications</b> — •SALVADOR PANÉ

### Exploiting spintronics for unconventional computing

MA 24.1	Wed	9:30–10:00	H 1012	<b>Control of Mesoscopic Magnetism for Computation</b> — •LAURA HEYDERMAN
MA 24.3	Wed	10:15–10:45	H 1012	<b>Spin waves for unconventional computing and data processing</b> — •PHILIPP PIRRO
MA 24.4	Wed	11:00–11:30	H 1012	<b>p-bits, p-transistors and p-circuits</b> — •KEREM CAMSARI
MA 24.6	Wed	11:45–12:15	H 1012	<b>Bits and Brains: New materials and brain-inspired concepts for low energy information processing</b> — •THEO RASING

### Topological Defects in Superconductors and Magnets

MA 30.1	Wed	15:00–15:30	H 0104	<b>Stability and Emergent Electrodynamics of Skyrmions</b> — •CHRISTIAN PFLEIDERER
MA 30.2	Wed	15:30–16:00	H 0104	<b>Optical Manipulation of Single Flux Quanta</b> — •PHILIPPE TAMARAT
MA 30.3	Wed	16:00–16:30	H 0104	<b>Skyrmion Lattices in Random and Ordered Potential Landscapes</b> — •CHARLES REICHHARDT
MA 30.4	Wed	16:45–17:15	H 0104	<b>Hedgehog Spin-Vortex Crystal Magnetic Order in Superconducting <math>\text{CaK}(\text{Fe}_{1-x}\text{M}_x)_4\text{As}_4</math> (M=Co, Ni)</b> — •ANNA BÖHMER
MA 30.5	Wed	17:15–17:45	H 0104	<b>Geometric Frustration and Ratchet Effect of Vortices in an Artificial-Spin/Superconductor Hybrid</b> — •ZHI-LI XIAO

### Spinorbitronics – from efficient charge/spin conversion based on spin-orbit coupling to chiral magnetic skyrmions I

MA 40.1	Thu	9:30–10:00	H 1012	<b>Understanding Spin-Charge Conversion in Topological Insulators</b> — •AURELIEN MANCHON
MA 40.5	Thu	11:15–11:45	H 1012	<b>Interfacial spin-orbitronic: Rashba interfaces and topological insulators as efficient spin-charge current converters</b> — •JUAN-CARLOS ROJAS-SANCHEZ

### Spinorbitronics – from efficient charge/spin conversion based on spin-orbit coupling to chiral magnetic skyrmions II

MA 47.1	Thu	15:00–15:30	H 1012	<b>Spin orbit fields at the Fe/GaAs(001) interface</b> — •CHRISTIAN BACK
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### Spinorbitronics – from efficient charge/spin conversion based on spin-orbit coupling to chiral magnetic skyrmions III

MA 57.1	Fri	9:30–10:00	H 1012	<b>Manipulation of interface-induced Skyrmions studied with STM</b> — •KIRSTEN VON BERGMANN
MA 57.6	Fri	11:30–12:00	H 1012	<b>Magnonics in skyrmion-hosting chiral magnetic materials</b> — •MARKUS GARST

**Joint symposia with MA participation****Invited talks of the joint symposium SYTO**

See SYTO for the full program of the symposium.

SYTO 1.1	Wed	9:30–10:00	H 0105	<b>Beyond Topologically Ordered States: Insights from Entanglement</b> — ●B. ANDREI BERNEVIG
SYTO 1.2	Wed	10:00–10:30	H 0105	<b>Topological Magnon Materials</b> — ALEXANDER MOOK, JÜRGEN HENK, ●INGRID MERTIG
SYTO 1.3	Wed	10:30–11:00	H 0105	<b>Topological Order of Interacting Polymers on a Substrate</b> — ●VINCENZO VITELLI
SYTO 1.4	Wed	11:15–11:45	H 0105	<b>Quantization of Heat Flow in Fractional Quantum Hall States</b> — ●MOTY HEIBLUM
SYTO 1.5	Wed	11:45–12:15	H 0105	<b>Currents and Phases in Quantum Rings</b> — ●KATHRYN MOLER

**Invited talks of the joint symposium SYVC (organized by MA)**

See SYVC for the full program of the symposium.

SYVC 1.1	Wed	15:00–15:30	H 0105	<b>Magneto-ionic control of interfacial magnetism</b> — ●GEOFFREY BEACH
SYVC 1.2	Wed	15:30–16:00	H 0105	<b>Ionic Control of Materials Beyond Interfaces</b> — ●DUSTIN GILBERT
SYVC 1.3	Wed	16:00–16:30	H 0105	<b>Microscopic Mechanisms of Memristive Switching in Metal Oxides</b> — ●RAINER WASER, STEPHAN MENZEL, REGINA DITTMANN
SYVC 1.4	Wed	17:00–17:30	H 0105	<b>In-situ and operando SQUID magnetometry under electrochemical control</b> — ●ROLAND WÜRSCHUM, MARKUS GÖSSLER, GREGOR KLINSER, EVA-MARIA STEYSKAL, HEINZ KRENN
SYVC 1.5	Wed	17:30–18:00	H 0105	<b>Reversible chemistry as a tool for dynamic control of physical properties</b> — ●ROBERT KRUK, SUBHO DASGUPTA, BIJOY DAS, HORST HAHN

**Invited talks of the joint symposium SYTH**

See SYTH for the full program of the symposium.

SYTH 1.1	Thu	9:30–10:00	H 0105	<b>Extracting the electrical properties of metal halide perovskite semiconductors using transient terahertz spectroscopy</b> — ●MICHAEL B. JOHNSTON
SYTH 1.2	Thu	10:00–10:30	H 0105	<b>THz nanophotonics with 2D materials</b> — ●MIRIAM SERENA VITIELLO
SYTH 1.3	Thu	10:30–11:00	H 0105	<b>Nonlinear responses and 2D spectroscopy using THz electric and magnetic fields</b> — ●KEITH A NELSON
SYTH 1.4	Thu	11:15–11:45	H 0105	<b>Low energy electrodynamics of correlated spin systems.</b> — ●N. PETER ARMITAGE
SYTH 1.5	Thu	11:45–12:15	H 0105	<b>Lightwave scanning tunneling microscopy of single molecules</b> — DOMINIK PELLER, TYLER L. COCKER, PING YU, RUPERT HUBER, ●JASCHA REPP

**Invited talks of the joint symposium SYDM**

See SYDM for the full program of the symposium.

SYDM 1.1	Thu	15:00–15:30	H 0105	<b>Bending, pulling, and cutting wrinkled two-dimensional materials</b> — ●KIRILL BOLOTIN
SYDM 1.2	Thu	15:30–16:00	H 0105	<b>Ultrafast valley and spin dynamics in single-layer transition metal dichalcogenides</b> — ●ALEJANDRO MOLINA-SANCHEZ
SYDM 1.3	Thu	16:00–16:30	H 0105	<b>Interlayer excitons in layered semiconductor transition metal dichalcogenides</b> — ●STEFFEN MICHAELIS DE VASCONCELLOS
SYDM 1.4	Thu	16:45–17:15	H 0105	<b>Exploring exciton physics in liquid-exfoliated 2D materials</b> — ●CLAUDIA BACKES
SYDM 1.5	Thu	17:15–17:45	H 0105	<b>A Progress Report on Electron Transport in MXenes; A New Family of 2D Materials</b> — ●MICHEL BARSOUM

**Invited talks of the joint symposium SYAM**

See SYAM for the full program of the symposium.

SYAM 1.1	Fri	9:30–10:00	H 0105	<b>Bringing Dino-Birds to life – Synchrotron X-ray fluorescence and Raman imaging of ancient materials</b> — ●UWE BERGMANN
SYAM 1.2	Fri	10:00–10:30	H 0105	<b>Linear and Nonlinear Optical Properties of Cultural Heritage Materials</b> — ●MARTA CASTILLEJO
SYAM 1.3	Fri	10:30–11:00	H 0105	<b>Morphology and topology of multiscale pore networks: Imaging structural alteration and hydric invasion</b> — ●PIERRE LEVITZ
SYAM 1.4	Fri	11:15–11:45	H 0105	<b>Painting cracks: a way to reveal physical properties of matter</b> — ●LUDOVIC PAUCHARD
SYAM 1.5	Fri	11:45–12:15	H 0105	<b>Finite element analysis and biomechanical interpretation of fossil material properties</b> — ●EMILY RAYFIELD

**Sessions**

MA 1.1–1.10	Mon	9:30–12:15	H 0112	<b>Magnetic nanoparticles (joint session MA/ CPP)</b>
MA 2.1–2.7	Mon	9:30–12:45	H 1012	<b>Focus Session: Nanomagnetism in the x-ray spotlight</b>
MA 3.1–3.13	Mon	9:30–13:00	H 3010	<b>Quantum Magnets and Molecular Magnets (joint session TT/MA)</b>
MA 4.1–4.12	Mon	9:30–12:45	EB 202	<b>Spin structures and magnetic phase transitions</b>
MA 5.1–5.14	Mon	9:30–13:15	EB 301	<b>Heusler compounds, semimetals and oxides (joint session MA/TT)</b>
MA 6.1–6.12	Mon	9:30–12:45	EB 407	<b>Ultrafast magnetism I</b>
MA 7.1–7.8	Mon	10:15–13:15	TC 010	<b>Focus Session: Magnetism in Materials Science: Thermodynamics, Kinetics and Defects I (joint session MM/MA)</b>
MA 8.1–8.8	Mon	15:00–18:30	H 1012	<b>Focus Session: Magnetic structurally and compositionally modulated nanowires and nanotubes</b>
MA 9.1–9.12	Mon	15:00–18:15	EB 202	<b>Magnetic domain walls</b>
MA 10.1–10.12	Mon	15:00–18:30	EB 301	<b>Skyrmions I (joint session MA/KFM/TT)</b>
MA 11.1–11.10	Mon	15:00–17:45	EB 407	<b>Ultrafast magnetism II</b>
MA 12.1–12.10	Mon	15:00–17:45	HFT-FT 101	<b>Superconductivity – Topological Defects in Superconductors and Magnets (joint session TT/MA)</b>
MA 13.1–13.8	Mon	15:45–18:45	TC 010	<b>Focus Session: Magnetism in Materials Science: Thermodynamics, Kinetics and Defects II (joint session MM/MA)</b>
MA 14.1–14.4	Mon	15:00–16:55	H 0112	<b>INNOMAG e.V. Dissertationspreis 2018 / Ph.D. Thesis Prize</b>
MA 15.1–15.3	Mon	16:55–18:05	H 0112	<b>INNOMAG e.V. Diploma-/Master Prize 2018</b>
MA 16.1–16.10	Tue	9:30–12:15	H 0112	<b>Magnetic characterization techniques</b>
MA 17.1–17.7	Tue	9:30–13:15	H 1012	<b>PhD Symposium: Ultrafast spin-lattice interactions (joint session MA/AKjDPG)</b>
MA 18.1–18.10	Tue	9:30–12:15	EB 202	<b>Multiferroics and magnetoelectrics I (joint session MA/KFM)</b>
MA 19.1–19.13	Tue	9:30–13:15	EB 301	<b>Skyrmions II (joint session MA/TT/KFM)</b>
MA 20.1–20.12	Tue	9:30–12:45	EB 407	<b>Magnetocaloric effects (joint session MA/TT)</b>
MA 21.1–21.114	Tue	9:30–13:00	Poster A	<b>Poster I</b>
MA 22.1–22.4	Tue	11:45–13:00	H 0106	<b>Focus Session: Magnetism in Materials Science: Thermodynamics, Kinetics and Defects III (joint session MM/MA)</b>
MA 23.1–23.11	Wed	9:30–12:30	H 0112	<b>Non-ultrafast magnetization dynamics</b>
MA 24.1–24.6	Wed	9:30–12:15	H 1012	<b>Focus Session: Exploiting spintronics for unconventional computing (joint session MA/TT)</b>
MA 25.1–25.9	Wed	9:30–12:00	EB 202	<b>Multiferroics and magnetoelectrics II (joint session MA/KFM)</b>
MA 26.1–26.10	Wed	9:30–12:15	EB 301	<b>Thin films – coupling effects</b>
MA 27.1–27.12	Wed	9:30–12:45	EB 407	<b>Spin currents and spin torques</b>
MA 28.1–28.11	Wed	9:30–12:45	EMH 225	<b>Multiferroic Oxide Thin Films and Heterostructures I (joint session KFM/TT/MA)</b>
MA 29.1–29.5	Wed	11:45–13:00	A 053	<b>Topological Insulators I (joint session TT/MA)</b>

MA 30.1–30.5	Wed	15:00–17:45	H 0104	<b>Focus Session: Topological Defects in Superconductors and Magnets (joint session TT/MA)</b>
MA 31.1–31.11	Wed	15:00–18:15	H 0110	<b>Magnonics I</b>
MA 32.1–32.7	Wed	15:00–16:45	H 0112	<b>Micromagnetism and computational magnetics</b>
MA 33.1–33.11	Wed	15:00–18:00	H 1012	<b>Biomedical and molecular magnetism</b>
MA 34.1–34.8	Wed	15:00–17:00	EB 202	<b>Spintronics (joint session MA/TT)</b>
MA 35.1–35.14	Wed	15:00–18:30	EB 301	<b>Skyrmions III (joint session MA/TT/KFM)</b>
MA 36.1–36.12	Wed	15:00–18:15	EB 407	<b>Topological insulators and Weyl semimetals (joint session MA/TT)</b>
MA 37.1–37.10	Wed	15:00–18:15	EMH 225	<b>Multiferroic Oxide Thin Films and Heterostructures II (joint session KFM/TT/MA)</b>
MA 38.1–38.13	Thu	9:30–13:15	H 0110	<b>Theory of strongly correlated systems</b>
MA 39.1–39.7	Thu	9:30–11:15	H 0112	<b>Micro- and nanostructured magnetic materials</b>
MA 40.1–40.8	Thu	9:30–12:30	H 1012	<b>Focus Session: Spinorbitronics – from efficient charge/spin conversion based on spin-orbit coupling to chiral magnetic skyrmions I (joint session MA/TT)</b>
MA 41.1–41.12	Thu	9:30–12:45	EB 202	<b>Surface magnetism I</b>
MA 42.1–42.11	Thu	9:30–12:30	EB 301	<b>Thin films – anisotropy</b>
MA 43.1–43.10	Thu	9:30–12:15	EB 407	<b>Magnetic textures I</b>
MA 44.1–44.13	Thu	9:30–13:00	A 053	<b>Topological Insulators II (joint session TT/MA)</b>
MA 45.1–45.11	Thu	9:30–13:30	EMH 225	<b>Ferroics and Multiferroics (joint session KFM/TT/MA)</b>
MA 46.1–46.11	Thu	15:00–18:00	H 0110	<b>Magnonics II</b>
MA 47.1–47.10	Thu	15:00–18:00	H 1012	<b>Focus Session: Spinorbitronics – from efficient charge/spin conversion based on spin-orbit coupling to chiral magnetic skyrmions II (joint session MA/TT)</b>
MA 48.1–48.7	Thu	15:00–17:00	H 2053	<b>Quantum Coherence and Quantum Information Systems (joint session TT/MA)</b>
MA 49.1–49.6	Thu	15:00–16:30	EB 202	<b>Terahertz dynamics</b>
MA 50.1–50.7	Thu	15:00–16:45	EB 301	<b>Soft and hard permanent magnets</b>
MA 51.1–51.9	Thu	15:00–17:30	EB 407	<b>Magnetic textures II</b>
MA 52.1–52.73	Thu	15:00–18:00	Poster C	<b>Poster II</b>
MA 53	Thu	18:00–19:00	H 0110	<b>General assembly of the Division of Magnetism (MA)</b>
MA 54.1–54.8	Fri	8:00–10:00	EB 301	<b>Spin-dependent transport phenomena</b>
MA 55.1–55.13	Fri	9:30–13:00	H 0110	<b>Complex Oxides – Bulk Properties, Surfaces and Interfaces (joint session TT/MA/KFM)</b>
MA 56.1–56.7	Fri	9:30–11:15	H 0112	<b>Spin-Hall effects</b>
MA 57.1–57.9	Fri	9:30–12:45	H 1012	<b>Focus Session: Spinorbitronics – from efficient charge/spin conversion based on spin-orbit coupling to chiral magnetic skyrmions III (joint session MA/TT)</b>
MA 58.1–58.6	Fri	9:30–11:00	EB 202	<b>Surface magnetism II</b>

## General assembly of the Division of Magnetism

Thursday 18.00 – 19.00 H 0110

All members of the Division of Magnetism are invited to attend!