

Prof. Dr. G. Jakob, publication list scientific journals:

Years: [2022](#), [2021](#), [2020](#),
[2019](#), [2018](#), [2017](#), [2016](#), [2015](#), [2014](#), [2013](#), [2012](#), [2011](#), [2010](#),
[2009](#), [2008](#), [2007](#), [2006](#), [2005](#), [2004](#), [2003](#), [2002](#), [2001](#), [2000](#),
[1999](#), [1998](#), [1997](#), [1996](#), [1995](#), [1994](#), [1993](#), [1992](#), [1991](#), [1990](#)

- 271) **Large ionic modulation of the interlayer exchange interaction in synthetic antiferromagnets**
M.-A. Syskaki, T. Dohi, S.O. Filnov, S.A. Kasatkov, B. Bednarz, A. Smekhova, F. Kronast, M. Bhukta, R. Pachat, J.W. van der Jagt, D. Ravelosona, J. Langer, M. Kläui, L. Herrera Diez, and G. Jakob,
submitted, <https://arxiv.org/pdf/2306.09888>

- 270) **Observation of time-reversal symmetry breaking in the band structure of altermagnetic RuO₂**
O. Fedchenko, J. Minar, A. Akashdeep, S. W. D'Souza, D. Vasilyev, O. Tkach, L. Odenbreit, Q. L. Nguyen, D. Kutnyakhov, N. Wind, L. Wenthau, M. Scholz, K. Rossnagel, M. Hoesch, M. Aeschlimann, B. Stadtmueller, M. Kläui, G. Schoenhense, G. Jakob, T. Jungwirth, L. Smejkal, J. Sinova, H. J. Elmers
submitted, <https://arxiv.org/pdf/2306.02170>

- 269) **Suppression of the spin waves non-reciprocity due to interfacial Dzyaloshinskii–Moriya interaction by lateral confinement in magnetic nanostructures**
S. Tacchi, R. Silvani, M. Kuepferling, A. Fernández Scarioni, S. Sievers, H.W. Schumacher, E. Darwin, M.-A. Syskaki, G. Jakob, M. Kläui, and G. Carlotti,
submitted, <https://arxiv.org/pdf/2306.16310>

- 268) **Fiber-tip spintronic terahertz emitters**
F. Paries, N. Tiercelin, G. Lezier, M. Vanwolleghe, F. Selz, M.-A. Syskaki, F. Kammerbauer, G. Jakob, M. Jourdan, M. Kläui, Z. Kaspar, T. Kampfrath, T.S. Seifert, G. v. Freyman, and D. Molter,
submitted, <https://arxiv.org/pdf/2305.01365>

- 267) **Temperature dependent study of the spin dynamics of coupled Y₃Fe₅O₁₂/Gd₃Fe₅O₁₂/Pt trilayers**
Felix Fuhrmann, Sven Becker, Akashdeep Akashdeep, Gerhard Jakob, Zengyao Ren, Mathias Weiler, and Mathias Kläui,
submitted, <https://arxiv.org/pdf/2303.15085>

- 266) **Single device offset-free magnetic field sensing principle with tunable sensitivity and linear range based on spin-orbit-torques**
Sabri Koraltan, Christin Schmitt, Florian Bruckner, Claas Abert, Klemens Prügl, Michael Kirsch, Rahul Gupta, Sebastian Zeilinger, Joshua M. Salazar-Mejía, Milan Agrawal, Johannes Güttinger, Armin Satz, Gerhard Jakob, Mathias Kläui, and Dieter Suess,
submitted, <https://arxiv.org/pdf/2303.13261>

- 265) **Optimization of Permalloy properties for magnetic field sensors using He⁺ irradiation**
Giovanni Masciocchi, Johannes Wilhelmus van der Jagt, Maria-Andromachi Syskaki, Jürgen Langer, Gerhard Jakob, Jeffrey McCord, Benjamin Borie, Andreas Kehlberger, Dafine Ravelosona, Mathias Kläui,
submitted, <https://arxiv.org/pdf/2302.14455>

- 264) **Enhanced thermally-activated skyrmion diffusion in synthetic antiferromagnetic systems with tunable effective topological charge**
Takaaki Dohi, Markus Weißenhofer, Nico Kerber, Fabian Kammerbauer, Yuqing Ge, Klaus Raab, Jakub Zázvorka, Maria-Andromachi Syskaki, Aga Shahee, Moritz Ruhwedel, Tobias Böttcher, Philipp Pirro, Gerhard Jakob, Ulrich Nowak, and Mathias Kläui,
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- 263) **Nanosecond True Random Number Generation with Superparamagnetic Tunnel Junctions - Identification of Joule Heating and Spin-Transfer-Torque effects**
Leo Schnitzspan, Mathias Kläui, and Gerhard Jakob,
Phys. Rev. Appl. (2023) accepted, <https://arxiv.org/pdf/2301.05694v1>
- 262) **Thermally induced all-optical ferromagnetic resonance in thin YIG films**
Eva Schmoranzarová, Jozef Kimák, Richard Schlitz, Sebastian T.B. Goennenwein, Dominik Kriegner, Helena Reichlová, Zbynek Sobán, Gerhard Jakob, Er-Jia Guo, Mathias Kläui, Markus Münzenberg, Petr Nemec, and Tomáš Ostatnicky,
New J. Phys. **25**, 033016 (2023), [doi: 10.1088/1367-2630/acc203](https://doi.org/10.1088/1367-2630/acc203)
- 261) **Detection of long-range orbital-Hall torques**
Arnab Bose, Fabian Kammerbauer, Rahul Gupta, Dongwook Go, Yuriy Mokrousov, Gerhard Jakob, and Mathias Kläui
Phys. Rev. B. **107**, 134423 (2023), [doi: 10.1103/PhysRevB.107.134423](https://doi.org/10.1103/PhysRevB.107.134423)
- 260) **Temperature Dependence of the Hyperfine Magnetic Field at Fe Sites in Ba-Doped BiFeO₃ Thin Films Studied by Emission Mössbauer Spectroscopy**
Juliana Heiniger-Schell, Krish Bharuth-Ram, Kimara Naicker, Vusumuzi Masondo, Thien Thanh Dang, Marianela Escobar, Carlos Díaz-Guerra, Georg Marschick, Hilary Masenda, Haraldur P. Gunnlaugsson, Bing Qi, Iraultza Unzueta, Sveinn Ólafsson, Rajdeep Adhikari, Gerrard Peters, Deena Naidoo, Peter Schaaf, Dmitry Zyabkin, Karl Johnston, Sven Becker, and Gerhard Jakob,
Crystals **2023**, 13, 724. (2023), [doi: 10.3390/cryst13050724](https://doi.org/10.3390/cryst13050724)
- 259) **Broadband Spintronic Terahertz Source with Peak Electric Fields Exceeding 1.5 MV/cm**
R. Rouzegar, A.L. Chekhov, Y. Behovits, B.R. Serrano, M.A. Syskaki, C.H. Lambert, D. Engel, U. Martens, M. Münzenberg, M. Wolf, G. Jakob, M. Kläui, T.S. Seifert, and T. Kampfrath
Phys. Rev. Appl. **19**, 034018 (2023), [doi: 10.1103/PhysRevApplied.19.034018](https://doi.org/10.1103/PhysRevApplied.19.034018)
- 258) **Optimised Spintronic Emitters of Terahertz Radiation for Time Domain Spectroscopy**
Ford M. Wagner, Simas Melnikas, Joel Cramer, Djamshid A. Damry, Chelsea Q. Xia, Kun Peng, Gerhard Jakob, Mathias Kläui, Simonas Kičas, and Michael B. Johnston,
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- 257) **Atomic Force Manipulation of Single Magnetic Nanoparticles for Spin-Based Electronics**
Paul Burger, Gyanendra Singh, Christer Johansson, Carlos Moya, Gilles Bruylants, Gerhard Jakob, and Alexei Kalaboukhov,
ACS Nano **16**, 19253 (2022), [doi: 10.1021/acsnano.2c08622](https://doi.org/10.1021/acsnano.2c08622)
- 256) **Control of magnetoelastic coupling in Ni/Fe multilayers using He⁺ ion irradiation**
Giovanni Masciocchi, Johannes van der Jagt, Maria-Andromachi Syskaki, Alessio Lamperti, Niklas Wolff, Andriy Lotnyk, Juergen Langer, Lorenz Kienle, Gerhard Jakob, Benjamin Borie, Andreas Kehlberger, Dafine Ravelosona, and Mathias Kläui,
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- 255) **Key points in the determination of the interfacial Dzyaloshinskii-Moriya interaction from asymmetric bubble domain expansion**
A. Magni, G. Carlotti, A. Casiraghi, E. Darwin, G. Durin, L. Herrera Diez, B.J. Hickey, A. Huxtable, C.Y. Hwang, G. Jakob, C. Kim, M. Kläui, J. Langer, C.H. Marrows, H.T. Nembach, D. Ravelosona, G.A. Riley, J.M. Shaw, V. Sokalski, S. Tacchi, and M. Kuepferling,
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- 254) **Anisotropic long-range spin transport in canted antiferromagnetic orthoferrite YFeO₃**
 Shubhankar Das, A. Ross, X. X. Ma, S. Becker, C. Schmitt, F. van Duijn, F. Fuhrmann, M.-A. Syskaki, U. Ebels, V. Baltz, A.-L. Barra, H. Y. Chen, G. Jakob, S. X. Cao, J. Sinova, O. Gomonay, R. Lebrun, M. Kläui,
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- 253) **Giant quadratic magneto-optical response of thin Y₃Fe₅O₁₂ films for sensitive magnetometry experiments**
 E. Schmoranzarová, T. Ostatnický, J. Kimák, D. Kriegner, H. Reichlová, R. Schlitz, A. Baďura, Z. Šobán, M. Münzenberg, G. Jakob, E.-J. Guo, M. Kläui, and P. Nemec,
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- 252) **Nanoscale subsurface dynamics of solids upon high-intensity laser irradiation observed by femtosecond grazing-incidence x-ray scattering**
 Lisa Randolph, Mohammadreza Banjafar, Thomas R. Preston, Toshinori Yabuuchi, Mikako Makita, Nicholas P. Dover, Christian Rödel, Sebastian Göde, Yuichi Inubushi, Gerhard Jakob, Johannes Kaa, Akira Kon, James K. Koga, Dmitriy Ksenzov, Takeshi Matsuoka, Mamiko Nishiuchi, Michael Paulus, Frederic Schon, Keiichi Sueda, Yasuhiko Sentoku, Tadashi Togashi, Michael Bussmann, Thomas E. Cowan, Mathias Kläui, Carsten Fortmann-Grote, Lingen Huang, Adrian P. Mancuso, Thomas Kluge, Christian Gutt, and Motoaki Nakatsutsumi
 Phys. Rev. Research **4**, 033038 (2022), [doi: 10.1103/PhysRevResearch.4.033038](https://doi.org/10.1103/PhysRevResearch.4.033038)
- 251) **Average power scaling of THz spintronic emitters efficiently cooled in reflection geometry**
 Tim Vogel, Alan Omar, Samira Mansourzadeh, Frank Wulf, Natalia Martin Sabenes, Melanie Müller, Tom S. Seifert, Alexander Weigel, Gerhard Jakob, Mathias Kläui, Joachim Pupeza, Tobias Kampfrath, and Clara J. Saraceno,
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- 250) **Terahertz-wave decoding of femtosecond extreme-ultraviolet light pulses**
 I. Ilyakov, N. Agrawal, J. Deinert, J. Liu, A. Yaroslavtsev, L. Foglia, G. Kurdi, R. Mincigrucci, E. Principi, G. Jakob, M. Kläui, T. S. Seifert, T. Kampfrath, S. Kovalev, R. E. Carley, A. O. Scherz, M. Gensch,
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- 249) **Transition of laser-induced terahertz spin currents from torque- to conduction-electron-mediated transport**
 Pilar Jiménez-Cavero, Oliver Gueckstock, Lukáš Nádvorník, Irene Lucas, Tom S. Seifert, Martin Wolf, Reza Rouzegar, Piet W. Brouwer, Sven Becker, Gerhard Jakob, Mathias Kläui, Chenyang Guo, Caihua Wan, Xiufeng Han, Zuanming Jin, Hui Zhao, Di Wu, Luis Morellón, and Tobias Kampfrath,
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- 248) **Observation of the Orbital Rashba-Edelstein Magnetoresistance**
 Shilei Ding, Zhongyu Liang, Dongwook Go, Chao Yun, Mingzhu Xue, Zhou Liu, Sven Becker, Wenyun Yang, Honglin Du, Changsheng Wang, Yingchang Yang, Gerhard Jakob, Mathias Kläui, Yuriy Mokrousov, and Jinbo Yang,
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- 247) **Tuning spin-orbit torques across the phase transition in VO₂/NiFe heterostructures**
 Jun-young Kim, Joel Cramer, Kyuhoon Lee, Dong-Soo Han, Dongwook Go, Pavel Salev, Pavel N. Lapa, Nicolas M. Vargas, Ivan K. Schuller, Yuriy Mokrousov, Gerhard Jakob, and Mathias Kläui,
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- 246) **Anomalous Hall effect in magnetic insulator heterostructures: Contributions from spin-Hall and magnetic-proximity effects**
Shilei Ding, Zhongyu Liang, Chao Yun, Rui Wu, Mingzhu Xue, Zhongchong Lin, Andrew Ross, Sven Becker, Wenyun Yang, Xiaobai Ma, Dongfeng Chen, Kai Sun, Gerhard Jakob, Mathias Kläui, and Jinbo Yang,
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- 245) **Imprinting the complex dielectric permittivity of liquids into the spintronic terahertz emissions**
Vasileios Balos, Patrick Müller, Gerhard Jakob, Mathias Kläui, and Mohsen Sajadi,
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- 244) **Assembly of iron oxide nanosheets at the air–water interface by leucine–histidine peptides**
Nina Hoinkis, Helmut Lutz, Hao Lu, Thaddeus W. Golbek, Mikkel Bregnhøj, Gerhard Jakob, Mischa Bonn, and Tobias Weidner
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- 243) **Tailoring large magnetoresistance in Dirac semimetal SrIrO₃ films**
Z. Y. Ren, Jun Miao, L. P. Zhang, Z. L. Lv, J. P. Cao, Gerhard Jakob, Jing Zhou, J. K. Chen, K. K. Meng, H. F. Li, and Y. Jiang
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- 242) **Magnetic coupling in Y₃Fe₅O₁₂/Gd₃Fe₅O₁₂ heterostructures**
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- 241) **Modulating the polarization of broadband terahertz pulses from a spintronic emitter at rates up to 10 kHz**
O. Gueckstock, L. Nadvornik, T.S. Seifert, M. Borchert, G. Jakob, G. Woltersdorf, M. Kläui, M. Wolf, and T. Kampfrath
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- 240) **Heisenberg Exchange and Dzyaloshinskii-Moriya Interaction in Ultrathin CoFeB Single and Multilayers**
Tobias Böttcher, Kyujoon Lee, Frank Heussner, Samridh Jaiswal, Gerhard Jakob, Mathias Kläui, Burkard Hillebrands, Thomas Brächer, Philipp Pirro
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- 239) **Broadband Terahertz Probes of Anisotropic Magnetoresistance Disentangle Extrinsic and Intrinsic Contributions**
Lukáš Nadvorník, Martin Borchert, Liane Brandt, Richard Schlitz, Koen A. de Mare, Karel Výborný, Ingrid Mertig, Gerhard Jakob, Matthias Kläui, Sebastian T. B. Goennenwein, Martin Wolf, Georg Woltersdorf, and Tobias Kampfrath,
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- 238) **Terahertz Spin-To-Charge Conversion by Interfacial Skew Scattering in Metallic Bilayers**
Oliver Gueckstock, Lukáš Nadvorník, Martin Gradhand, Tom Sebastian Seifert, Genaro Bierhance, Reza Rouzegar, Martin Wolf, Mehran Vafae, Joel Cramer, Maria Andromachi Syskaki, Georg Woltersdorf, Ingrid Mertig, Gerhard Jakob, Mathias Kläui, and Tobias Kampfrath
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- 237) **Impact of the interplay of piezoelectric strain and current-induced heating on the field-like spin–orbit torque in perpendicularly magnetized Ta/Co₂₀Fe₆₀B₂₀/Ta/MgO film**
M. Filianina, Z. Wang, L. Baldrati, K. Lee, M. Vafae, G. Jakob, and M. Kläui,
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- 236) **Electrical detection of the spin reorientation transition in antiferromagnetic TmFeO₃ thin films by spin Hall magnetoresistance**
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- 235) **Description of intermodulation generation of nonlinear responses beyond the validity of the power series expansion**
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- 234) **Rapid online solid-state battery diagnostics with optically pumped magnetometers**
Yinan Hu, Geoffrey Z. Iwata, Lykourgos Bougas, John W. Blanchard, Arne Wickenbrock, Gerhard Jakob, Stephan Schwarz, Clemens Schwarzwinger, Alexej Jerschow, and Dmitry Budker,
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- 233) **Harnessing non-local orbital-to-spin conversion of interfacial orbital currents for efficient spin-orbit torques**
Shilei Ding, Andrew Ross, Dongwook Go, Lorenzo Baldrati, Zengyao Ren, Frank Freimuth, Sven Becker, Fabian Kammerbauer, Jinbo Yang, Gerhard Jakob, Yuriy Mokrousov, Mathias Kläui,
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- 232) **Enhancement of Spin Hall Conductivity in W-Ta alloy**
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- 231) **Impact of Annealing Temperature on Tunneling Magnetoresistance Multilayer Stacks**
Leo Schnitzspan, Joel Cramer, Jan Kubik, Tareq Tarequzzaman, Gerhard Jakob, and Mathias Kläui,
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- 230) **Phonon Bridge Effect in Superlattices of Thermoelectric TiNiSn/HfNiSn With Controlled Interface Intermixing**
Sven Heinz, Emigdio Chavez Angel, Maximilian Trapp, Hans-Joachim Kleebe, and Gerhard Jakob,
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- 229) **Spin-orbit torque driven multi-level switching in He⁺ irradiated W-CoFeB-MgO Hall bars with perpendicular anisotropy**
Xiaoxuan Zhao, Yang Liu, Daoqian Zhu, Mamour Sall, Xueying Zhang, Helin Ma, Jürgen Langer, Berthold Ocker, Samridh Jaiswal, Gerhard Jakob, Mathias Kläui, Weisheng Zhao, and Dafiné Ravelosona,
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- 228) **Electric-field control of spin-orbit torques in perpendicularly magnetized W/CoFeB/MgO film**
Mariia Filianina, Jan-Philipp Hanke, Kyujoon Lee, Dong-Soo Han, Samridh Jaiswal, Adithya Rajan, Gerhard Jakob, Yuriy Mokrousov, and Mathias Kläui,
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- 227) **Current induced chiral domain wall motion in CuIr/CoFeB/MgO thin films with strong higher order spin-orbit torques**
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- 226) **The challenges in realizing an exchange coupled BiFeO₃ – double perovskite ferrimagnet bilayer**
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- 225) **Propagation Length of Antiferromagnetic Magnons Governed by Domain Configurations**
Andrew Ross, Romain Lebrun, Olena Gomonay, Daniel Grave, Asaf Kay, Lorenzo Baldrati, Sven Becker, Alireza Qaiumzadeh, Camilo Ulloa, Gerhard Jakob, Florian Kronast, Jairo Sinova, Rembert Duine, Arne Brataas, Avner Rothschild, and Mathias Kläui,
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- 224) **Individual skyrmion manipulation by local magnetic field gradients**
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- 223) **Hole Localization in Thermoelectric Half-Heusler (Zr_{0.5}Hf_{0.5})Co(SbSn_x) Thin Films**
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- 222) **Interfacial Dzyaloshinskii–Moriya interaction and chiral magnetic textures in a ferrimagnetic insulator**
Shilei Ding, Andrew Ross, Romain Lebrun, Sven Becker, Kyujoon Lee, Isabella Boverter, Souvik Das, Yuichiro Kurokawa, Shruti Gupta, Jinbo Yang, Gerhard Jakob, Mathias Kläui,
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- 221) **Enhancing domain wall velocity through interface intermixing in W-CoFeB-MgO films with perpendicular anisotropy**
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- 220) **Antenna-coupled spintronic terahertz emitters driven by a 1550 nm femtosecond laser oscillator**
U. Nandi, M.S. Abdelaziz, S. Jaiswal, G. Jakob, O. Gückstock, R. Rouzegar, T.S. Seifert, M. Kläui, T. Kampfrath, and S. Preu,
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- 219) **Enhanced thermoelectric properties of lightly Nb doped SrTiO₃ thin films**
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- 218) **Thermal skyrmion diffusion used in a reshuffler device**
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