

## apl. Prof. Dr. Martin Jourdan

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### List of Publications (29.05.2019)

91. *Surface resonance of thin films of the Heusler half-metal Co<sub>2</sub>MnSi probed by soft x-ray angular resolved photoemission spectroscopy*  
Christian Lidig, Jan Minár, Jürgen Braun, Hubert Ebert, Andrei Gloskovskii, Jonas A. Krieger, Vladimir Strocov, Mathias Kläui, and **Martin Jourdan**  
Phys. Rev. B 99, 174432 (2019).
90. *Imaging of current induced Néel vector switching in antiferromagnetic Mn<sub>2</sub>Au*  
S. Yu. Bodnar, M. Filianina, S. P. Bommanaboyena, T. Forrest, F. Maccherozzi, A. A. Sapozhnik, Y. Skourski, M. Kläui, and **M. Jourdan**  
Phys. Rev. B 99, 140409(R) (2019).
89. *Unidirectional Spin Hall Magnetoresistance as a Tool for Probing the Interfacial Spin Polarization of Co<sub>2</sub>MnSi*  
C. Lidig, J. Cramer, L. Weißhoff, T.R. Thomas, T. Kessler, M. Kläui, and **M. Jourdan**  
Phys. Rev. Appl. 11, 044039 (2019)
88. *Néel Spin-Orbit Torque Driven Antiferromagnetic Resonance in Mn<sub>2</sub>Au Probed by Time-Domain THz Spectroscopy*  
N. Bhattacharjee, A. A. Sapozhnik, S. Yu. Bodnar, V. Yu. Grigorev, S. Y. Agustsson, J. Cao, D. Dominko, M. Obergfell, O. Gomonay, J. Sinova, M. Kläui, H.-J. Elmers, **M. Jourdan**, and J. Demsar  
Phys. Rev. Lett. 120, 237201 (2018).
87. *Strain detection in non-magnetic steel by Kerr-microscopy of magnetic tracer layers*  
**M. Jourdan**, M.M.B. Krämer, M. Kläui, H.-J. Elmers, S. Deldar, M. Smaga, T. Beck  
J. Magn. Magn. Mat. 465, 143 (2018).
86. *Experimental determination of exchange constants in antiferromagnetic Mn<sub>2</sub>Au*  
A. A. Sapozhnik, C. Luo, H. Ryll, F. Radu, **M. Jourdan**, H. Zabel, and Hans-Joachim Elmers  
Phys. Rev. B 97, 184416 (2018).
85. *Direct imaging of antiferromagnetic domains in Mn<sub>2</sub>Au manipulated by high magnetic fields*  
A.A. Sapozhnik, M. Filianina, S. Yu. Bodnar, A. Lamirand, M. Mawass, Y. Skourski, H.-J. Elmers, H. Zabel, M. Kläui, **M. Jourdan**  
Phys. Rev. B, 97, 134429 (2018).
84. *Signature of a highly spin polarized resonance state at Co<sub>2</sub>MnSi(0 0 1)/Ag(0 0 1) interfaces*  
Christian Lidig, Jan Minár, Jürgen Braun, Hubert Ebert, Andrei Gloskovskii, Alexander Kronenberg, Mathias Kläui and **Martin Jourdan**  
J. Phys. D: Appl. Phys. 51, 135307 (2018).
83. *Complex Terahertz and Direct Current Inverse Spin Hall Effect in YIG/Cu<sub>1-x</sub>Ir<sub>x</sub> Bilayers Across a Wide Concentration Range*  
Joel Cramer, Tom Seifert, Alexander Kronenberg, Felix Fuhrmann, Gerhard Jakob,

- Martin Jourdan**, Tobias Kampfrath, and Mathias Kläui  
Nano Letters 18, 1064 (2018).
82. *Writing and reading antiferromagnetic Mn<sub>2</sub>Au by Néel spin-orbit torques and large anisotropic magnetoresistance*  
S.Yu. Bodnar, L. Šmejkal, I. Turek, T. Jungwirth, O. Gomonay, J. Sinova, A.A. Sapozhnik, H.-J. Elmers, M. Kläui, and **M. Jourdan**  
Nature Communications 9, 348 (2018).
81. *Manipulation of antiferromagnetic domain distribution in Mn<sub>2</sub>Au by ultrahigh magnetic fields and by strain*  
R. Abrudan, Yu. Skourski, **M. Jourdan**, H. Zabel, M. Kläui, H.-J. Elmers  
Physica Status Solidi – rrl 11, 1600438 (2017).
80. *Dirac cone and pseudogapped density of states in the topological half-Heusler compound YPtBi*  
A. Kronenberg, J. Braun, J. Minár, H.-J. Elmers, D. Kutnyakhov, A. V. Zaporozhchenko, R. Wallauer, S. Chernov, K. Medjanik, G. Schönhense, M. Kläui, S. Chadov, H. Ebert, and **M. Jourdan**  
Phys. Rev. B 94, 161108 (2016).
79. *Efficient metallic spintronic emitters of ultrabroadband terahertz radiation*  
T. Seifert, S. Jaiswal, U. Martens, J. Hannegan, L. Braun, P. Maldonado, F. Freimuth, A. Kronenberg, J. Henrizi, I. Radu, E. Beaurepaire, Y. Mokrousov, P. M. Oppeneer, **M. Jourdan**, G. Jakob, D. Turchinovich, L. M. Hayden, M. Wolf, M. Münzenberg, M. Kläui, and T. Kampfrath  
Nature Photonics, 10, 483 (2016).
78. *Evidence for Eight-Node Mixed-Symmetry Superconductivity in a Correlated Organic Metal*  
Daniel Guterding, Sandra Diehl, Michaela Altmeyer, Torsten Methfessel, Ulrich Tutsch, Harald Schubert, Michael Lang, Jens Müller, Michael Huth, Harald O. Jeschke, Roser Valentí, **Martin Jourdan**, and Hans-Joachim Elmers  
Phys. Rev. Lett., 116, 237001 (2016).
77. *Superconducting Energy Gap Features of FeSe Investigated by Tunneling Spectroscopy on Planar Junctions*  
Eike Venzmer, Alexander Kronenberg, and **Martin Jourdan**  
J. Supercon. Nov. Magn., 4, 897 (2016).
76. *Spin Currents injected electrically and thermally from highly spin polarized Co<sub>2</sub>MnSi*  
Alexander Pfeiffer, Shaojie Hu, Robert M. Reeve, Alexander Kronenberg, **Martin Jourdan**, Takashi Kimura, and Mathias Kläui  
Appl. Phys. Lett., 107, 082401 (2015).
75. *Epitaxial Mn<sub>2</sub>Au thin films for antiferromagnetic spintronics*  
**M. Jourdan**, H. Bräuning, A. Sapozhnik, H.-J. Elmers, H. Zabel, and M. Kläui  
J. Phys. D: Appl. Phys., 48, 385001 (2015).
74. *Magnetic configurations in nanostructured Co<sub>2</sub>MnGa thin film elements*  
S Finizio, A Kronenberg, M Vafaei, M Foerster, K Litzius, A de Lucia, T O Menteş, L Aballe, B Krüger, **M Jourdan** and M Kläui  
New J. Phys. **17**, 083030 (2015).
73. *Disorder-induced gap in the normal density of states of the organic superconductor κ-(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]Br*

- Sandra Diehl, Torsten Methfessel, Ulrich Tutsch, Jens Müller, Michael Lang, Michael Huth, **Martin Jourdan** and Hans-Joachim Elmers  
J. Phys.: Condens. Matter **27**, 265601 (2015).
72. *Monitoring surface resonances on Co<sub>2</sub>MnSi(100) by spin-resolved photoelectron spectroscopy.*  
J. Braun, **M. Jourdan**, J. Minár, A. Kronenberg, S. Chadov, B. Balke, A. Gloskovskii, M. Kolbe, H.J. Elmers, G. Schönhense, H. Ebert, C. Felser and M. Kläui; Phys. Rev. B, **91**, 195128 (2015).
71. *Revival of Heusler compounds for spintronics*  
**M. Jourdan**, Materials Today **17**, 362 (2014).
70. *Direct observation of half-metallicity in the Heusler compound Co<sub>2</sub>MnSi.*  
**M. Jourdan**, J. Minár, J. Braun, A. Kronenberg, S. Chadov, B. Balke, A. Gloskovskii, M. Kolbe, H.J. Elmers, G. Schönhense, H. Ebert, C. Felser and M. Kläui; Nature Communications **5**, 3974 (2014).
69. *Thin Film Growth of Fe-based Superconductors: From Fundamental Properties to Functional Devices. A comparative review.*  
S. Haindl, M. Kieszun, S. Oswald, C. Hess, B. Büchner, S. Kölling, L. Wilde, T. Thersleff, **M. Jourdan**, H. Hiramatsu, H. Hosono,  
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68. *Magnetic anisotropy engineering in thin film Ni nanostructures by magneto-elastic coupling.*  
S. Finizio, M. Foerster, M. Buzzi, B. Krüger, **M. Jourdan**, C.A.F. Vaz, J. Hockel, T. Miyawaki, A. Tkach, S. Valencia, F. Kronast, G.P. Carman, F. Nolting, and M. Kläui,  
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67. *Microwave spectroscopy on heavy-fermion systems: Probing the dynamics of charges and magnetic moments*  
Marc Scheffler, Katrin Schlegel, Conrad Clauss, Daniel Hafner, Christian Fella, Martin Dressel, **Martin Jourdan**, Jörg Sichelschmidt, Cornelius Krellner, Christoph Geibel, Frank Steglich  
Phys. Stat. Sol. **250**, 439 (2013).
66. *Test of band structure calculations for Heusler compounds by spin-resolved photoemission spectroscopy*  
M. Kolbe, S. Chadov, E. Arbelo Jorge, G. Schönhense, C. Felser, H.-J. Elmers, M. Kläui, and **M. Jourdan**  
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65. *Electric transport through nanometric CoFe<sub>2</sub>O<sub>4</sub> thin films investigated by conducting atomic force microscopy*  
M. Foerster, D. F. Gutierrez, J. M. Rebled, E. Arbelo, F. Rigato, **M. Jourdan**, F. Peiro, J. Fontcuberta,  
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64. *Element-specific ferromagnetic resonance in epitaxial Heusler spin valve systems*  
P. Klaer, F. Hoffmann, G. Woltersdorf, E. Arbelo Jorge, **M. Jourdan**, C. H. Back, and H. J. Elmers,  
J. Phys. D: Appl. Phys. **44**, 425004 (2011).
63. *Terahertz conductivity of the heavy-fermion compound UNi<sub>2</sub>Al<sub>3</sub>*

- Julia P. Ostertag, Marc Scheffler, Martin Dressel, **Martin Jourdan**  
Phys. Rev. B **84**, 035132 (2011).
62. *Significant spin polarization of Co<sub>2</sub>MnGa Heusler thin films on MgO(100) measured by ultraviolet photoemission spectroscopy*  
Michaela Hahn, Gerd Schönhense, Elena Arbelo Jorge, and **Martin Jourdan**  
Appl. Phys. Lett. **98**, 232503 (2011).
61. *Spectroscopy of the electronic states of the Heusler compounds Co<sub>2</sub>FeAl and Co<sub>2</sub>Cr<sub>0.6</sub>Fe<sub>0.4</sub>Al and the influence of oxidation*  
**Martin Jourdan**, Fabian Große-Schulte, Michaela Hahn and Gerd Schönhense  
J. Phys. D: Appl. Phys **44**, 155001 (2011).
60. *Temperature dependence of x-ray absorption spectra in the ferromagnetic Heusler alloys Mn<sub>2</sub>VAl and Co<sub>2</sub>FeAl*  
P. Klaer, E. Arbelo Jorge, **M. Jourdan**, W. H. Wang, H. Sukegawa, K. Inomata, and H. J. Elmers  
Phys. Rev. B **82**, 024418 (2010).
59. *Preparation, characterization, and upper critical field of epitaxial FeSe thin films*  
Sebastian ten Haaf and **Martin Jourdan**  
J. Appl. Phys. **108**, 023913 (2010).
58. *Microwave conductivity of heavy fermions in UPd<sub>2</sub>Al<sub>3</sub>*  
Marc Scheffler Marc, Martin Dressel and **Martin Jourdan**  
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57. *Observing the anisotropic optical response of the heavy-fermion compound UNi<sub>2</sub>Al<sub>3</sub>*  
Julia P. Ostertag, Marc Scheffler, Martin Dressel, **Martin Jourdan**  
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56. *Interface and bulk magnetism of Co<sub>2</sub>Cr<sub>0.6</sub>Fe<sub>0.4</sub>Al and Co<sub>2</sub>CrAl thin films*  
**M. Jourdan**, E. Arbelo Jorge, C. Herbort, M. Kallmayer, P. Klaer, and H. J. Elmers  
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55. *Spin-resolved unoccupied density of states in epitaxial Heusler-alloy films*  
M. Kallmayer, P. Klaer, H. Schneider, E. Arbelo Jorge, C. Herbort, G. Jakob, **M. Jourdan**, and H. J. Elmers.  
Phys. Rev. B **80**, 020406 (2009)
54. *Magnetic and structural properties of Co<sub>2</sub>FeAl<sub>1-x</sub>Si<sub>x</sub> thin films*  
E. Arbelo Jorge, **M. Jourdan**, M. Kallmayer, P. Klaer, and H. J. Elmers  
Journal of Physics: Conference Series (2009), accepted.
53. *Magnetoresistance of Fe thin films on faceted Al<sub>2</sub>O<sub>3</sub> substrates*  
S. Mooser and **M. Jourdan**  
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52. *Morphology induced magnetoresistance enhancement of tunneling junctions with the Heusler electrode Co<sub>2</sub>Cr<sub>0.6</sub>Fe<sub>0.4</sub>Al*  
C. Herbort, E. Arbelo Jorge, and **M. Jourdan**  
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51. *Morphology and magnetoresistance of Co<sub>2</sub>Cr<sub>0.6</sub>Fe<sub>0.4</sub>Al-based tunnelling junctions*

- C. Herbort, E. Arbelo, and **M. Jourdan**  
 J. Phys. D: Appl. Phys, 42, 8406 (2009).
50. *Effects of post-growth annealing on structural and compositional properties of the  $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$  surface and its relevance for the surface electron spin polarization*  
 J.-P. Wüstenberg, J. Fischer, C. Herbort, **M. Jourdan**, M. Aeschlimann and M. Cinchetti  
 J. Phys. D: Appl. Phys, 42, 8416 (2009).
49. *Brillouin light scattering study of  $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$  and  $\text{Co}_2\text{FeAl}$  Heusler compounds*  
 O. Gaier, J. Hamrle, S. Trudel, A. Conca Parra, B. Hillebrands, E. Arbelo, C. Herbort and **M. Jourdan**  
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48. *Low-temperature microwave response of heavy-fermion compounds*  
 M. Scheffler, M. Dressel, and **M. Jourdan**  
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47. *Magnetic and Electronic Properties of Heusler Alloy Films Investigated by X-Ray Magnetic Circular Dichroism*  
 H.J. Elmers, A. Conca, T. Eichhorn, A. Gloskovskii, K. Hild, G. Jakob, **M. Jourdan** ,  
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46. *Ni-based superconductor: Heusler compound  $\text{ZrNi}_2\text{Ga}$*   
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45. *Conversion electron Mossbauer spectroscopy of epitaxial  $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$  thin films*  
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44. *Anisotropic transport properties of  $\text{UNi}_2\text{Al}_3$  thin films*  
 M. Foerster, A. Zakharov, and **M. Jourdan**  
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43. *Tunneling spectroscopy of the Heusler compound  $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$*   
**M. Jourdan**, A. Conca, C. Herbort, M. Kallmayer, H. J. Elmers, and H. Adrian  
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42. *Epitaxial  $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$  thin films and magnetic tunnel junctions.*  
 A. Conca, **M. Jourdan**, and H. Adrian,  
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41. *Towards a full Heusler alloy showing room temperature half-metallicity at the surface*  
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40. *Correlation of local disorder and electronic properties in the Heusler alloy  $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$*   
 M. Kallmayer, A. Conca, **M. Jourdan**, H. Schneider, G. Jakob, H. J. Elmers,  
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  37. *Dynamics of heavy fermions: Drude response in  $\text{UPd}_2\text{Al}_3$  and  $\text{UNi}_2\text{Al}_3$*   
M. Scheffler, M. Dressel, **M. Jourdan**, and H. Adrian  
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  36. *Magnetic anisotropies and magnetization reversal on the  $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$  Heusler compound*  
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  33. *Magnetic order in thin films of the heavy fermion superconductor  $\text{UNi}_2\text{Al}_3$*   
**M. Jourdan**, A. Zakharov, A. Hiess, T. Charlton, N. Bernhoeft, and D. Mannix,  
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  32. *Magnetic tunnel junctions with the Heusler compound  $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$*   
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  31. *Extremely slow Drude relaxation of correlated electrons*  
M. Scheffler, M. Dressel, **M. Jourdan**, and H. Adrian,  
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  30. *Magnetic tunnelling junctions with the Heusler compound  $\text{Co}_2\text{Cr}_{0.6}\text{Fe}_{0.4}\text{Al}$*   
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