

Curriculum Vitae

Name: András Deák

Date and place of birth: 26 November 1987, Budapest, Hungary

Education:

2011–2015 Ph.D. in Physics, Budapest University of Technology and Economics (BME)
research topic: “*Theoretical study of magnetic heterostructures*”

2009–2011 M.Sc. in Physics, BME
research topic: “*Magnetic interactions in nanostructures*”

2006–2009 B.Sc. in Physics, BME
research topic: “*Dzyaloshinskii–Moriya interaction in metals*”

Employment:

2017– research fellow BME

2014–2017 research assistant BME

Languages:

- Hungarian: native
- English: intermediate
- Russian: intermediate

List of publications:

1. *Exchange interactions from a nonorthogonal basis set: From bulk ferromagnets to the magnetism in low-dimensional graphene systems*, L. Oroszlány, J. Ferrer, A. Deák, L. Udvardi, L. Szunyogh, Phys. Rev. B **99**, 224412 (2019)
2. *Magnetic excitations in non-collinear antiferromagnetic Weyl semimetal Mn_3Sn* , P. Park, J. Oh, K., J. Jackson, A. Deák, L. Szunyogh, K. H. Lee, H. Cho, H.-L. Kim, H. C. Walker, D. Adroja, V. Sechovský, J.-G. Park, npj Quant. Mats. **3**, 63 (2018)
3. *Site-Resolved Contributions to the Magnetic-Anisotropy Energy and Complex Spin Structure of Fe/MgO Sandwiches*, R. Cuadrado, L. Oroszlány, A. Deák, T. A. Ostler, A. Meo, R. V. Chepulskii, D. Apalkov, R. F. L. Evans, L. Szunyogh, R. W. Chantrell, Phys. Rev. Appl. **9**, 054048 (2018)
4. *Relativistic spin-polarized KKR theory for superconducting heterostructures: Oscillating order parameter in the Au layer of Nb/Au/Fe trilayers*, G. Csire, A. Deák, B. Nyári, H. Ebert, J. F. Annett, B. Újfalussy, Phys. Rev. B **97**, 024514 (2018)

5. *Magnetization compensation and spin reorientation transition in ferrimagnetic DyCo₅: Multi-scale modeling and element-specific measurements*, A. Donges, S. Khmelevskiy, A. Deák, R.-M. Abrudan, D. Schmitz, I. Radu, F. Radu, L. Szunyogh, U. Nowak, Phys. Rev. B **96**, 024412 (2017)
6. *Role of temperature-dependent spin model parameters in ultra-fast magnetization dynamics*, A. Deák, D. Hinzke, L. Szunyogh, U. Nowak, J. Phys.: Condens. Matter **29**, 314003 (2017)
7. *Formation and stability of metastable skyrmionic spin structures with various topologies in an ultrathin film*, L. Rózsa, K. Palotás, A. Deák, E. Simon, R. Yanes, L. Udvardi, L. Szunyogh, U. Nowak, Phys. Rev. B **95**, 094423 (2017)
8. *Skyrmions with attractive interactions in an ultrathin magnetic film*, L. Rózsa, A. Deák, E. Simon, R. Yanes, L. Udvardi, L. Szunyogh, U. Nowak, Phys. Rev. Lett. **117**, 157205 (2016)
9. *Magnetism of gadolinium: A first-principles perspective*, L. Oroszlány, A. Deák, E. Simon, S. Khmelevskiy, and L. Szunyogh, Physical Review Letters **115**, 096402 (2015)
10. *Magnetic correlations beyond the Heisenberg model in an Fe monolayer on Rh(001)*, A. Deák, K. Palotás, L. Szunyogh, and I. A. Szabó, Journal of Physics: Condensed Matter **27**, 146003 (2015)
11. *Metallic magnetism at finite temperatures studied by relativistic disordered moment description: Theory and applications*, A. Deák, E. Simon, L. Balogh, L. Szunyogh, M. dos Santos Dias, J. B. Staunton, Phys. Rev. B **89**, 224401 (2014)
12. *Spin-correlations and magnetic structure in an Fe monolayer on 5d transition metal surfaces*, E. Simon, K. Palotás, B. Ujfalussy, A. Deák, G. M. Stocks, L. Szunyogh, J. Phys.: Condens. Matter **26**, 186001 (2014)
13. *Fluctuating local moments, itinerant electrons, and the magnetocaloric effect: Compositional hypersensitivity of FeRh*, J. B. Staunton, R. Banerjee, M. dos Santos Dias, A. Deák, L. Szunyogh, Phys. Rev. B **89**, 054427 (2014)
14. *Thickness-dependent magnetic structure of ultrathin Fe/Ir(001) films: From spin-spiral states toward ferromagnetic order*, A. Deák, L. Szunyogh, B. Ujfalussy, Phys. Rev. B **84**, 224413 (2011)
15. *Anisotropic spin-spin correlations in Mn₁/X(111) (X = Pd, Pt, Ag, and Au)*, M. dos Santos Dias, J. B. Staunton, A. Deák, L. Szunyogh, Phys. Rev. B **83**, 054435 (2011)

Scholarships and grants:

- 2017 Post-doctoral excellence research grant
(National Research, Development and Innovation Office)
- 2014 Scholarship of the Pro Progressio Foundation for PhD students
- 2012 Apáczai Csere János scholarship for PhD students, national program
- 2010 Scholarship of the Hungarian Republic