

Scanning Probe Methods Group, Prof. Dr. Roland Wiesendanger

**Publications: Original Articles**

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**Nano-scale collinear multi-Q states driven by higher-order interactions***M. Gutzeit, A. Kubetzka, S. Haldar, H. Pralow, M. A. Goerzen, R. Wiesendanger, S. Heinze, and K. von Bergmann*, Nature Communications **13** 5764 (2022)**Experimental realization of semiconducting monolayer Si<sub>2</sub>Te<sub>2</sub> films***X. Huang, R. Xiong, K. Volckaert, C. Hao, D. Biswas, M. Bianchi, Ph. Hofmann, Ph. Beck, J. Warmuth, B. Sa, J. Wiebe, and R. Wiesendanger*, Advanced Functional Materials **2208281** (2022)**Correlation of magnetism and disordered Shiba bands in Fe monolayer islands on Nb(110)***J. J. Goedecke, L. Schneider, Y. Ma, K. Ton That, D. Wang, J. Wiebe, and R. Wiesendanger*, ACS Nano **16** 14066 (2022)**Spin revolution breaks time reversal symmetry of rolling magnets***E. Y. Vedmedenko and R. Wiesendanger*, npj Scientific Reports **12** 13608 (2022)**Ultrasensitive Sub-monolayer Palladium Induced Chirality Switching and Topological Evolution of Skyrmions***G. Chen, C. Ophus, R. Lo Conte, R. Wiesendanger, G. Yin, A. K. Schmid, and K. Liu*, Nano Letters **22** 6678 (2022)**Creating arbitrary sequences of mobile magnetic skyrmions and antiskyrmions***P. Siegl, M. Stier, A. F. Schäffer, E. Y. Vedmedenko, Th. Posske, R. Wiesendanger, and M. Thorwart*, Phys. Rev. B **106** 014421 (2022)**Nanoscale skyrmions on a square atomic lattice***R. Brüning, A. Kubetzka, K. von Bergmann, E. Vedmedenko, and R. Wiesendanger*, Phys. Rev. B **105** L241401 (2022)**Topological characterization of dynamic chiral magnetic textures using machine learning***T. Matthies, A. Schäffer, Th. Posske, R. Wiesendanger, and E. Vedmedenko*, Phys. Rev. Appl. **17** 054022 (2022)**Controlled creation of quantum skyrmions***P. Siegl, E. Y. Vedmedenko, M. Stier, M. Thorwart, and T. Posske*, Phys. Rev. Res. **4** 023111 (2022)**Complex magnetic ground states and topological electronic phases of atomic spin chains on superconductors***J. Neuhaus-Steinmetz, E. Y. Vedmedenko, T. Posske, and R. Wiesendanger*, Phys. Rev. B **105** 165415 (2022)**Coexistence of antiferromagnetism and superconductivity in Mn/Nb(110)***R. Lo Conte, M. Bazarnik, K. Palotás, L. Rózsa, L. Szunyogh, A. Kubetzka, K. von Bergmann, and R. Wiesendanger*, Phys. Rev. B **105** L100406 (2022)**Precursors of Majorana modes and their length-dependent energy oscillations probed at both ends of atomic Shiba chains***Lucas Schneider, Philip Beck, Jannis Neuhaus-Steinmetz, Levente Rózsa, Thore Posske, Jens Wiebe, and Roland Wiesendanger*, Nature Nanotechnology **17** 384 (2022)**Structural and superconducting properties of ultrathin Ir films on Nb(110)***Ph. Beck, L. Schneider, L. Bachmann, J. Wiebe, and R. Wiesendanger*, Phys. Rev. Materials **6** 024801 (2022)**Controlled growth of Gd-Pt surface alloys on Pt(111)***M. Przychodnia, M. Hermanowicz, E. Sierda, M. Elsebach, T. Grzela, R. Wiesendanger, and M. Bazarnik*, Phys. Rev. B **105** 035416 (2022)**Zero-field skyrmionic states and in-field edge-skyrmions induced by boundary tuning***J. Spethmann, E. Vedmedenko, R. Wiesendanger, A. Kubetzka, and K. von Bergmann*, npj Commun. Phys. **5** 19 (2022)**Disorder-induced time effect in the antiferromagnetic domain state of Fe<sub>1+y</sub>Te***J. Fikacek, J. Warmuth, F. Arnold, C. Piamonteze, Z. Mao, V. Holy, Ph. Hofmann, M. Bremholm, J. Wiebe, R. Wiesendanger, and J. Honolka*, J. Magn. Mater. **540** 168426 (2021)**Distorted 3Q state driven by topological-chiral magnetic interactions***S. Haldar, S. Meyer, A. Kubetzka, and S. Heinze*, Phys. Rev. B **104** L180404 (2021)

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