

On-line SPICE-SPIN+X Seminars



Wednesday, 10th February 2021, 15:00 (German Time)

The seminar will be via Zoom ([Meeting ID: 841 4623 5056](#)) and live streamed in the SPICE YouTube Channel.



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Magnetic Materials and Topology

Topology, a mathematical concept, recently became a hot and truly transdisciplinary topic in condensed matter physics, solid state chemistry and materials science. All 200 000 inorganic materials were recently classified into trivial and topological materials: topological insulators, Dirac, Weyl and nodal-line semimetals, and topological metals [1]. Around 20% of all materials host topological bands. Currently, we have focussed also on magnetic materials, a fertile field for new since all crossings in the band structure of ferromagnets are Weyl nodes or nodal lines [2], as for example Co_2MnGa and $\text{Co}_3\text{Sn}_2\text{S}_2$. Beyond a single particle picture and identified antiferromagnetic topological materials [3].

[1] Bradlyn et al., *Nature* 547 298, (2017), Vergniory, et al., *Nature* 566 480 (2019)

[2] Belopolski, et al., *Science* 365, 1278 (2019), Liu, et al. *Nature Physics* 14, 1125 (2018), Guin, et al. *Advanced Materials* 31 (2019) 1806622, Liu, et al., *Science* 365, 1282 (2019), Morali, et al., *Science* 365, 1286 (2019)

[3] Xu et al. *Nature* 586 (2020) 702.