



TRR 80 Sonderseminar

Am Mittwoch, den 15. November um 15:30 Uhr

spricht

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über das Thema

Magnetic force microscopy beyond imaging - from low energy condensed matter physics to high energy particle physics

Magnetic force microscopy (MFM) - a scanning probe technique based on atomic force microscopy - has established itself as a valuable tool to uncover magnetic domain structures and their formation on the sub-micrometer scale [1,2]. On the other hand, the magnetically coated tip can serve as a local probe to characterize important properties of superconducting samples. We have designed and constructed a low temperature, ^3He magnetic force microscope operating within a three-axis vector magnet with field ranges of 2-2-9 T in x-y-z direction [3].

We demonstrate how to employ this system to investigate intrinsic properties of superconductors, such as the pinning force of Abrikosov vortices, as well as the London penetration depth [4], which can yield valuable information about the superconducting gap symmetry. In addition, we introduce the experimental realization of a model system to study quark confinement through Abrikosov vortices in superconductors [5].

- [1] J. Jeong, et al., Phys. Rev. B 92, 054426 (2015).
- [2] D. Wulferding, et al., Sci. Rep. 7, 46296 (2017).
- [3] J. Yang, et al., Rev. Sci. Instrum. 87, 023704 (2016).
- [4] D. Wulferding, et al., Phys. Rev. B 92, 014517 (2015).
- [5] J. Yang, et al., in preparation.

Gäste sind herzlich willkommen!

Der Vortrag findet im Seminarraum S-403 / Institut für Physik, Universität Augsburg statt.

Gastgeber: Prof. Dr. István Kézsmárki
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