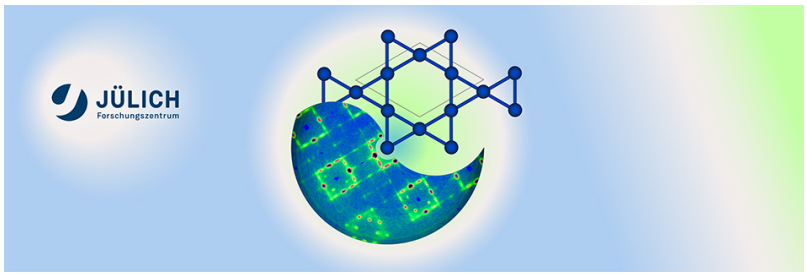

Beitrag ID: **95** Typ: **Talk**

Insights into internal magnetic structure of iron oxide nanoparticles: a combined small-angle neutron scattering and magnetometry study

Dienstag, 7. Oktober 2025 16:45 (15 Minuten)

This work continues our previous studies on iron oxide nanoparticles [1] to systematically investigate the magnetic structure of the nanoparticles in a broad range of particle sizes. The parameters of the core-shell structure were determined using small-angle neutron and X-ray scattering. A non-magnetic layer at the nanoparticle surface was determined using small-angle scattering with polarized neutrons at saturating fields. Room temperature hysteresis data was obtained using vibrating sample magnetometry and the M(H) curves were inverted to obtain the magnetic moment distribution within the nanoparticle systems.
The detailed magnetic structure of the nanoparticles is obtained by analyzing the results on the non-magnetic layer, the size distribution and magnetic moment distribution.

[1] T. Köhler et al., Nanoscale, 13, 6965 (2021).

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