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Neutron gratin interferometry II

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Using some exemplary measurements obtained at the ANTARES beamline, applications, capabilities and limitations of neutron grating interferometry (nGI) will be demonstrated. The image below nicely shows the difference between sensitivity of transmission images (TI) and dark field images (DFI) on the example of suspensions of micro particles in water. Since the DFI contrast is result of scattering in the ultra-small angle regime, special focus will lie on the deeper connections to scattering properties. The examples will include a look at the connections to the scattering form factor and to anisotropic scattering. Additionally, the influence of slightly larger small angle scattering will be addressed, since, although not directly resolved by nGI it can lead to pseudo contrast in the images.

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