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Advances in Stretched Wire Tomography at Kyma

Previous IMMWs showed that stretched wire tomography is a viable measurement technique for measuring magnetic fields near the magnet surface. This method takes advantage of standard stretched wire measurement and uses field integrals as the input information for tomographic image reconstruction. Rotating the magnet around the axis perpendicular to the stretched wire and measuring field integral profiles creates a sinogram of an object. A two-dimensional magnetic field profile is reconstructed by applying different algorithms to the obtained sinogram.
In this article, we present the improvements to the stretched wire tomography setup in Kyma. The quality of the reconstructed magnetic field image stems from the setup components' characteristics, motion control, synchronization, and data post-processing. Focusing on the latter, we present some of the obtained magnetic field images and how post-processing parameters (e.g., data spectral filtering and rotation center determination) and the choice of image reconstruction algorithms affect the discrepancy from the results obtained measuring with a standard Hall sensor.
Furthermore, we discuss the main advantages and drawbacks of the current setup and suggest possible solutions to the issues.

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