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High resolution spin-echo spectroscopy and Larmor diffraction at TRISP

Tuesday, 5 December 2023 14:00 (3 hours)

We propose to significantly increase the efficiency of TRSIP for high-resolution spectroscopy and Larmor diffraction. Through optimized beam geometry and development of a spin-echo multi-detector, gain factors of 5-50 in counting time are possible. Shorter spin-echo units in combination with new radio-frequency (RF) spin-flippers will provide a larger flux on the sample. The proposed spin-echo analyzer will cover a total angle of 15°, devided into 10 individual channels. Each channel will carry an independent spin-echo unit with the ability to generate inclined field boundaries, which are required both for spectroscopy of dispersive excitations [1] and for Larmor diffraction [2]. The design of these spin-echo units inside the multi-detector follows a recent development based on so superconducting Wollaston prisms.

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