

15th International Conference on Muon Spin Rotation, Relaxation and Resonance



Contribution ID: 208 Contribution code: P-THU-10

Type: Poster

Low Energy Measurements in Low-Energy μ SR

Thursday, 1 September 2022 17:20 (20 minutes)

In the context of μ SR studies on magnetic materials in the ordered state, often a strong initial depolarization is found in the zero field spectra. For transverse field measurements this is often referred to as a loss in asymmetry. In case of the low-energy μ SR (LE- μ SR) setup this needs a more detailed discussion since effects such as time-of-flight distribution decay, back scattering, and muon reflection will change the spectra at early times and low implantation energies ($E < 3\text{keV}$). These effects are well understood and reproducible allowing to correct for in any given experiment. We will discuss them and show how to correct for in experiments at low implantation energies.

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Session Classification: Posters

Track Classification: New techniques