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Considerations for achieving polarization analysis for high resolution QENS

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Polarization analysis provides profound additions in knowledge for the field of soft condensed matter research. The ability to study dynamics of incoherent and coherent scattering contributions separately gives unique information on the cooperative vs local dynamics of a system. The JCNS is interested in exploring new instrumentation ideas as a polarization analysis upgrade to our SHPERES backscattering instrument and new ideas for the proposed High-brilliance Source (HBS). We will discuss the current concepts and simulations on ways of achieving polarization analysis for the high resolution regime, i.e. $\Delta E < 1 \mu\text{eV}$ on a traditional backscattering instrument such as SPHERES at MLZ.

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