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The high resolution neutron backscattering spectrometer SPHERES

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The SPectrometer for High Energy RESolution (SPHERES) at MLZ is a third generation backscattering spectrometer with focusing optics and phase-space transform (PST) chopper. It provides high energy resolution with a good signal-to-noise ratio. Over the recent years different components of the instrument have been upgraded to further improve the instrument performance.

SPHERES enables investigations on a broad range of scientific topics. It is in particular sensitive to the incoherent scattering from hydrogen and allows to access dynamic processes up to a timescale of a few ns. Hence it is well suited to investigate dynamics in various soft matter systems like polymers or proteins. Other typical applications include molecular reorientations and rotational tunneling, diffusion processes in various systems or relaxation in viscous liquids.

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