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Neutron Spin Echo Spectroscopy with the J-NSE "PHOENIX: recent scientific examples

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The neutron spin echo spectrometer J-NSE "PHOENIX" is presented together with the most recent scientific examples. Mostly, the slow motion on molecular length scales of proteins in solution and polymers in the melt or in solution are measured. Recent publications in this area include experiments on asymmetric tubes in a polymer melt, on the effect of crowding in solutions of single chain nano-particles and on the determination of the cooperativity length in glass forming polymers. A different application of the NSE spectrometer are precision measurements of the echo phase shift during scattering at polarized isotopes (³He, ¹²⁹Xe, ¹³¹Xe) for the determination of the incoherent scattering lengths of the corresponding isotope.

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