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Influence of topological structure and molecular motion on the signal of stimulated echo NMR in polymer networks

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Abstract

The theory of stimulated echoes for different sequences of three RF pulses is represented. The methods of determination of correlation function of molecular motion of polymer chains from NMR experiments directly (free induction decay (FID) and stimulated echo) is developed on the base of the theory. The modeling of FID and stimulated echo in polymer networks is carried out, the type of correlation function at different average length of a polymeric chain N_0 between knots is defined. Strong influence of the molecular-weight distribution (MWD) on the type of correlation function in polymer melts is established.