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MANIFESTATION OF REPTATION MOTIONS OF MACROMOLECULES ON DIFFUSIONAL ATTENUATION OF THE STIMULATED SPIN ECHO SIGNAL*

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The effect of fluctuations in the characteristic time of motion of defects and the length of the force pipe on the diffusional attenuation profile of the spin echo signal in the long wave region is discussed. When the correlation times of these fluctuations are more than the average time of pipe regeneration the diffusional attenuation has an essentially non-exponential character and can be described in terms of a random fluctuating coefficient of self-diffusion. The true coefficient of self-diffusion can be determined from the initial inclination of the diffusional attenuation profile.

THE EXISTING level of understanding of the dynamics of concentrated polymer systems is largely associated with the concept of reptation. This was first discussed in a paper by De Gennes [1] on the basis of model ideas of "chain in tube" and diffusion of "gas

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