

Effects of chemical exchange and self-diffusion on the spin-echo signals in two-spin systems

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Abstract

A theoretical study is reported for nuclear spin echo in a two-spin system. It is assumed that the decay of the echo signals is due to translational diffusion of the molecules and to chemical exchange between magnetically distinct nuclei. The behavior of the spin system is described by McConnell's equations, as modified to include diffusion. The method of stationary Markov processes is applied to solve the equations of motion. Theoretical explanations are given for spin-echo observations. © 1971 The Faraday Press, Inc.

<http://dx.doi.org/10.1007/BF00524126>
