

## The influence of restricted geometry of diamagnetic nanoporous media on $^3\text{He}$ relaxation

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### Abstract

© 2015 AIP Publishing LLC. This is an experimental study of the spin kinetics of  $^3\text{He}$  in contact with diamagnetic samples of inverse opals  $\text{SiO}_2$ , and  $\text{LaF}_3$  nanopowder. It is demonstrated that the nuclear magnetic relaxation of the absorbed  $^3\text{He}$  occurs due to the modulation of dipole-dipole interaction by the quantum motion in the two-dimensional film. It is found that the relaxation of liquid  $^3\text{He}$  occurs through a spin diffusion to the absorption layer, and that the restricted geometry of diamagnetic nanoporous media has an influence on the  $^3\text{He}$  relaxation.

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