Observation of ^{3}He-B Texture Transition in Aerogel

Y. Morioka, K. Kondo, Y. Kimura, C. Kato, K. Obara, H. Yano, O. Ishikawa, and T. Hata

Graduate School of Science, Osaka City University, Osaka, Japan

We have studied superfluid ^{3}He in 97.5% porosity aerogel using a saddle shape NMR coil on outside of the columnar glass tube surrounding aerogel. It is found that the aerogel acts as an impurity for liquid ^{3}He and also a small anisotropy of aerogel leads to a noble phase of superfluid ^{3}He. At 22 bar, cooling through T_c^a =1.44 mK, we observed the A-like phase at first. Below 1.26 mK, only the B-like phase signal appeared whose NMR signal has shifted to positive frequency side. Farther cooling below 1.00 mK, NMR signal gradually changed to one of flare-out texture, in which the large peak appeared at the Larmor frequency with the long tail extending to higher frequencies. On warming, the NMR signal became the same shape as the high temperature B-like phase signal. The texture transitions on cooling and warming occurred at nearly the same temperature. Such a texture transition has never observed in bulk ^{3}He. It is a new phenomena which is attributed to aerogel impurity.

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