

# Superfluid Phases of $^3\text{He}$ in "Ordered" Aerogel

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We report the results of systematic studies of superfluid states of  $^3\text{He}$  in "ordered" aerogel. This aerogel is strongly anisotropic because it consists of  $\text{Al}_2\text{O}_3$  strands which are nearly parallel to each other. Two kinds of superfluid phases were observed in this system earlier<sup>1</sup>: the low temperature phase (LTP) and two high temperature phases (Equal Spin Pairing phases - ESP1 and ESP2). Also the ESP1 phase was previously proved to have ABM order parameter with strong polar distortion, which value depends on pressure and temperature. At low pressures and near the superfluid transition the ESP1 phase presumably corresponds to the pure polar phase. Recent analysis of the NMR linewidths has allowed us to find the possible region of the existence of the pure polar phase. Additional measurements also show that the LTP corresponds to BW phase with strong polar distortion. As for the ESP2 phase (which is observed only at high pressures) we assume that it has the same order parameter as the ESP1 phase (i.e. ABM with polar distortion), but has a different spatial distribution of orbital part of the order parameter.

1. R.Sh.Askhadullin, V.V.Dmitriev, D.A.Krasnikhin et al., JETP Lett. **95**, 326 (2012).

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