

凝縮系物理学ゼミナール

Condensed Matter Seminar

(※ seminar in Japanese, held online via zoom)

Date: **13:30-15:00**, Wednesday, 29 July 2020

“Analog of Anderson theorem for
p-wave superfluid ^3He in Aerogel”

Speaker:

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Abstract:

Recently, one analog of the Anderson's theorem [2,3] for the s-wave superconductor has attracted much interest in the context of the p-wave polar pairing state [6] of superfluid ^3He in a model aerogel in the limit of strong uniaxial anisotropy [5]. We discuss to what extent the theorem is satisfied in the polar phase in real aerogels by examining the normal to polar transition temperature T_c and the low temperature behavior [4] of the superfluid energy gap under an anisotropy of a moderate strength and comparing the obtained results with experimental data. The situation in which the Anderson's theorem clearly breaks down is briefly discussed.

References:

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- [5] V. V. Dmitriev, A. A. Senin, A. A. Soldatov, and A. N. Yudin, Phys. Rev. Lett. **115**, 165304 (2015).
- [6] K. Aoyama and R. Ikeda, Phys. Rev. B **73**, 060504(R) (2006).