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Nodeless versus Nodal Scenarios of Possible Triplet Superconductivity in the Quasi-One-Dimensional Layered Conductor $Li_{0.9}Mo_6O_{17}$[1]
OTAR SEPPER, ANDREI LEBED, University of Arizona — We solve a theoretical problem of the upper critical magnetic field, parallel to a conducting axis of a layered, quasi-one-dimensional (Q1D) superconductor. In particular, we consider two cases: a triplet superconducting order parameter with and without zeros on the Q1D Fermi surface. We demonstrate [1,2] that the orbital destructive effects can destroy the superconducting state with parallel magnetic fields much higher than the so-called Clogston-Chandrasekhar paramagnetic limit, and that the nodeless order parameter is in a better quantitative agreement with the recent experimental data [3]. Our results indicate strong evidence in favor of triplet superconducting pairing in the layered Q1D superconductor $Li_{0.9}Mo_6O_{17}$. This work was supported by the NSF under Grant DMR-1104512.

[1] O. Sepper and A. G. Lebed, Phys. Rev. B 88, 094520 (2013.)
[2] A. G. Lebed and O. Sepper, Phys. Rev. B (Rapid Communications) 87, 100511(R) (2013).
[3] J. F. Mercure et al., Phys. Rev. Lett. 108, 187003 (2012).

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