Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Leggett modes and vortex dynamics in time-reversal symmetry breaking multiband superconductors MIKHAIL SILAEV, EGOR BABAEV, The Royal Institute of Technology, Stockholm, Sweden — In the framework of quasiclassical kinetic theory we study the spectrum of collective excitations and vortex dynamics in multiband superconductors. We show that the existence of mixed phase-density modes in multiband superconductors with broken time-reversal symmetry generates a new contribution to the viscosity of magnetic flux flow. Near the time reversal symmetry breaking phase transition this new contribution dominates over the usual Tinkham and Bardeen-Stephen mechanisms and provides a peculiar temperature dependence of the vortex viscosity. The results could be relevant for three band superconductor $Ba_{1-x}K_xFe_2As_2$.

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Date submitted: 14 Nov 2014 Electronic form version 1.4