

Abstract Submitted
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Signature of Aslamazov-Larkin fluctuation Hall conductivity in Tantalum Nitride films above their superconducting transition temperature NICHOLAS BREZNAY, MIHIR TENDULKAR, AHARON KAPITULNIK, Stanford University, KAREN MICHAELI, M.I.T., ALEXANDER FINKEL'STEIN, Texas A&M University — We have studied the Hall effect in superconducting Tantalum Nitride films. We find a large contribution to the Hall conductivity near the superconducting transition, which we can track to temperatures well above T_c and magnetic fields well above the upper critical field, $H_{c2}(0)$. This contribution arises from Aslamazov-Larkin superconducting fluctuations, and we find quantitative agreement between our data and theoretical analysis based on time dependent Ginzburg-Landau theory. We will also remark on the appearance of a sign change in the Hall effect and on the high field fluctuation conductivity in superconducting Tantalum and Indium Oxide thin films.

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