

Abstract Submitted
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Stability of the Finite Bias Tunneling Anomaly in Spin-Paramagnetically Limited Al Films HANK WU, PHILIP ADAMS, Louisiana St. U. — We will present a detailed study of the finite bias tunneling anomaly in the density of states (DOS) spectrum of spin-paramagnetically limited Al films in high parallel magnetic fields ($\sim 6\text{T}$). The anomaly arises from a non-perturbative fluctuation mode associated with the formation of virtual Cooper pairs in the paramagnetic phase. We find that the strength and the stability of the mode grows rapidly with increasing film resistivity. Indeed, tilted field measurements in films with sheet resistance $\sim R_Q/10$ show that the anomaly persists up to tilt angles corresponding to perpendicular fields in excess of H_{c2} ! Comparison with the theory I. Aleiner and coworkers will be discussed, along with the implications for nature of DOS spectrum in the high resistance limit.

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