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Point contact spectroscopy of electron-doped cuprates in a magnetic field of 32 tesla¹ YUN SUNG-HEE, NEESHA ANDERSON, TARA DHAKAL, AMLAN BISWAS, Department of Physics, University of Florida — Electron-doped cuprates have low values of the upper critical field ($H_{c2} \sim 10$ T at 1.5 K) and hence it is possible to study their normal state at low temperatures. Such studies have been done before and showed evidence of a “pseudogap”. However, to understand the origin of this pseudogap and which model of high- T_c superconductivity it supports, it is necessary to study the effect of high magnetic fields on this pseudogap. We have performed point contact spectroscopy experiments using junctions between a normal metal (Pt-Rh) and electron-doped $\text{Pr}_{2-x}\text{Ce}_x\text{CuO}_4$ (PCCO) films for $0.13 < x < 0.17$. To probe the normal state at low temperatures (~ 0.4 K), we suppressed the superconductivity by applying high magnetic fields (up to 32T). We will show the effects of such high fields on the pseudogap and discuss our results in the context of present theories *viz.* preformed pairs and the presence of a quantum critical point.

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Amlan Biswas
Department of Physics, University of Florida

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