

Abstract Submitted
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Novel understanding for the transitions in the ultra-quantum limit of graphite¹ ZENGWEI ZHU², ROSS MCDONALD, ARKADY SHEKHTER³, BRAD RAMSHAW, KIMBERLY MODIC, FEDOR BALAKIREV, NEIL HARRISON, MS-E536, NHMFL, Los Alamos National Laboratory, Los Alamos, New Mexico 87545 — A fascinating transition was documented in the ultra-quantum limit of graphite between 22T and 53T. Recently, another unexpected high-field transition was observed around 75T. The relative simple band structure, though the complicated phase transitions, suggesting more researches should be carried out to understand the mysterious transitions. We performed temperature- and angle-dependent in-plane and out-of-plane magnetoresistance measurements in the ultra-quantum limit on graphite. Our experiments reveal the transition between 22T and 53T is more complicating and interesting than the previous reports. We explain the cause of the transition properly with novel understanding.

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