



Contribution ID: 396

Type: Talk

【122】 Evidence for antiferromagnetism coexisting with charge order in the trilayer cuprate $\text{HgBa}_2\text{Ca}_2\text{Cu}_3\text{O}_{8+\delta}$

Wednesday, September 1, 2021 2:15 PM (15 minutes)

Multilayered cuprates possess not only the highest superconducting temperature transition but also offer a unique platform to study the interplay between competing and intertwined orders with superconductivity. Here, we study the underdoped trilayer cuprate $\text{HgBa}_2\text{Ca}_2\text{Cu}_3\text{O}_8$ and we report the first quantum oscillation measurements in magnetic field up to 88 T. A careful analysis of the spectra of QOs is interpreted in terms of coexistence of antiferromagnetic order in the inner plane, leading to small hole pockets and charge order in the outer planes, leading to small electron pocket. The additional frequency corresponding to magnetic breakdown tunneling between the inner and outer planes is also observed.

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Session Classification: Condensed Matter Physics

Track Classification: Condensed Matter Physics (KOND)