Abstract Submitted
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Hallmarks of Metal Insulator transition in Doped Sr_2IrO_4 YUE CAO, QIANG WANG[1], Univ of Colorado - Boulder, RAJENDRA DHAKA, Swiss Light Source, JUSTIN WAUGH, THEODORE REBER[2], HAOXIANG LI, STEPHEN PARHAM, XIAOQING ZHOU, SEUNG RYONG PARK[3], Univ of Colorado - Boulder, TONGFEI QI, OLEKSANDR KORNETA, University of Kentucky, NICHOLAS PLUMB, Swiss Light Source, AARON BOSTWICK, ELI ROTENBERG, JONATHAN DENLINGER, Advanced Light Source, MICHAEL HERMELE, Univ of Colorado - Boulder, GANG CAO, University of Kentucky, DANIEL DESSAU, Univ of Colorado - Boulder — How Mott insulators acquire metallicity upon the introduction of extra carriers lies at the heart of correlated electron physics. The evolution of the electronic structure and low energy dynamics in the ultra-low doped region where the Mottness begins to break down is a critical place to study this physics. We report ARPES studies of the Rh and La doped Sr_2IrO_4 and show the appearance and evolution of a pseudogap and Fermi arcs. Further more we present evidence how the Mott gap breaks down with a profound change in the band structure. The experimental results in the doped iridates resemble those observed in the cuprate systems, which are prototype Mott insulators, and suggest we could establish a series of signatures that occur in the metal insulator transition.

[1]Now at Los Alamos National Lab
[2]Now at Brookhaven National Lab
[3]Now at Incheon National University

Yue Cao
Univ of Colorado - Boulder

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