

Abstract Submitted
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**Electronic Structure of Electron-doped $\text{Sm}_{1.86}\text{Ce}_{0.14}\text{CuO}_4$:
Strong ‘Pseudo-Gap’ Effects and Nodeless Gap** S. R. PARK, Y. S. ROH, Y.
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— Angle resolved photoemission (ARPES) data from the electron doped cuprate
superconductor $\text{Sm}_{1.86}\text{Ce}_{0.14}\text{CuO}_4$ shows a much stronger pseudo-gap or “hot-spot”
effect than that observed in other optimally doped n-type cuprates. Importantly,
these effects are strong enough to drive the zone-diagonal states below the chemical
potential, implying that d-wave superconductivity in this compound would be of a
novel “nodeless” gap variety. The gross features of the Fermi surface topology and
low energy electronic structure are found to be well described by reconstruction of
bands by a root 2 times root 2 order. Comparison of the ARPES and optical data
from the same sample shows that the pseudo-gap energy observed in optical data is
consistent with the inter-band transition energy of the model, allowing us to have a
unified picture of pseudo-gap effects.

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