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Temperature-dependent gap opening in doped graphene
CHOONGYU HWANG, Materials Sciences Division,Lawrence Berkeley National Laboratory, CHRIS JOZWIAK, Materials Sciences Division, Lawrence Berkeley National Laboratory, SWANEE J. SHIN, EUGENE H. HALLER, Department of Materials Science and Engineering, University of California, Berkeley, ALESSANDRA LANZARA, Department of Physics, University of California, Berkeley, CA, and Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA — Fundamental physical properties of a material are strongly affected by electronic correlations, which typically reveal their origins through a temperature-dependence study. By using angle-resolved photoemission spectroscopy, we study unusual gap opening in doped graphene as a function of temperature, which poses a strong constraint on the charge carrier scattering mechanism in this system. Our finding provides a potentiality to realize new correlated states with unusual properties.

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