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The modulation of electron-electron interactions in graphene via temperature. CHOONGYU HWANG, JINWOONG HWANG, Pusan National University, HYEJIN RYU, SUNG-KWAN MO, JONATHAN DENLINGER, DEBIN WANG, YUEGANG ZHANG, Lawrence Berkeley National Laboratory, ALESSANDRA LANZARA, University of California, Berkeley and Lawrence Berkeley National Laboratory — Near the charge neutral point, graphene exhibits interesting many-body interactions beyond what Fermi liquid theory can predict. We investigate such many-body effects in charge neutral graphene using angle-resolved photoemission spectroscopy. The electron band structure shows strong deviation from the characteristic linearity at low temperatures. Our findings suggest a possible realization of strong correlations between Dirac fermions in graphene via temperature.

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