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Strong enhancement of electron-phonon coupling in doped-graphene CHOONGYU HWANG, Pusan Natl Univ, DUCK YOUNG KIM, Geophysical Laboratory, Carnegie Institution of Washington, Washington DC, USA, D.A. SIEGEL, KEVIN T. CHAN, J. NOFFSINGER, Department of Physics, University of California, Berkeley, CA, USA, A.V. FEDOROV, Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, USA, MARVIN L. COHEN, Department of Physics, University of California, Berkeley, CA, USA, J.B. NEATON, The Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA, USA, B. JOHANSSON, Department of Materials and Engineering, Royal Institute of Technology, Stockholm, SE-100 44, Sweden, A. LANZARA, Department of Physics, University of California, Berkeley, CA, USA — Fundamental physical properties of a material are affected by many-body interactions. Among them, the interactions of electrons to phonon modes not only govern transport properties of the material, but also play an important role in realizing novel phenomena, when such an electron-phonon coupling is strongly enhanced. By using angle-resolved photoemission spectroscopy, we study strong enhancement of electron-phonon coupling of doped graphene. Our finding provides a viable route to realize strongly correlated electron phases in graphene.

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