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Interlayer Thermal Coupling of Hot Dirac Fermions in Epitaxial Graphene DONG SUN, CHARLES DIVIN, TED NORRIS, CLAIRE BERGER, WALT DE HEER, PHILLIP FIRST, CENTER FOR ULTRAFAST OPTICAL SCIENCE, UNIVERSITY OF MICHIGAN, ANN ARBOR, MI 48109-2099 COLLABORATION, DEPARTMENT OF PHYSICS, GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, GA, 30332 COLLABORATION — Degenerate and non-degenerate ultrafast pump-probe spectroscopy is used to study interlayer thermal coupling of hot Dirac Fermions in carbon face epitaxial graphene. The hot carriers in lightly doped and undoped graphene layers are selectively excited by the pump laser while leaving the carriers in the heavily doped layer not directly excited. Within the 500fs, carries at elevated temperature in the heavily doped layer is observed, which is excited due to the interlayer thermal coupling of the hot carriers.

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