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Pump-induced far-infrared reflection in quasi-intrinsic graphene MARTIN MITTENDORFF, RYAN J. SUESS, THOMAS E. MURPHY, University of Maryland, College Park, MD 20742, USA, HARALD SCHNEIDER, MANFRED HELM, STEPHAN WINNERL, Helmholtz-Zentrum Dresden-Rossendorf, D-01314 Dresden, Germany — We present an experimental far-infrared pump-probe study on multilayer epitaxial graphene that is complemented by a straightforward theoretical model. To gain deeper insights into the pump-induced change in the complex conductivity in the far-infrared, pump-probe measurements recording both transmission and reflection were performed. These measurements reveal a pump-induced increase of the transmission at low pump fluence, and a decreased transmission at high pump fluence due to a strong pump-induced reflection. Modelling the temperature dependent conductivity for interband and intraband processes in combination with an energy balance equation reproduces the observed results.

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