

Abstract Submitted  
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**Polarization Dependent Optical Responses of Graphene Nanoribbons**<sup>1</sup> TING CAO, SANGKOOK CHOI, STEVEN LOUIE, Physics Department, UC Berkeley and Lawrence Berkeley National Lab — The optical response of an anisotropic system depends on light's polarization direction. In this study, we perform first-principle calculations on polarization dependent optical absorption spectra of graphene nanoribbons at the RPA and GW-BSE level. We observe significant polarization dependent features. We demonstrate the many-body origins of these features. We also discuss the polarization dependent optical responses of other carbon nanostructures, and connect our work to experimental measurements.

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