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Tunable dichroism and optical absorption of graphene by strain engineering MAURICE OLIVA-LEYVA, GERARDO G. NAUMIS, Univ Nacl Autonoma de Mexico — Recently, the concept of strain engineering has been experimentally extended to the optical domain. However, strain-induced modifications of optical absorption in graphene have been only quantified in the case of a uniaxial strain. In this sense, our work opens a more rich scenario to explore strained-graphene transparency because it is applicable to an arbitrary uniform strain (e.g., uniaxial, biaxial, and so forth). From the corresponding Dirac-like equation [1], we compute the optical conductivity of graphene under a uniform strain [2,3]. This result allowed us to study the transmittance of linearly polarized light between two media separated by a strained graphene sheet [4]. We analytically characterize the degree of dichroism and the transparency of graphene as a function of an arbitrary uniform strain and the incident polarization. Also, we discuss how measurements of dichroism and transparency for two different polarization directions can be used to determine the magnitude and direction of strain. Ours findings result in very useful tools to tune the graphene absorption by mechanical strain [4]. [1] Phys. Rev. B 88, 085430 (2013). [2] J. Phys.: Condens. Matter 26, 125302 (2014). [3] J. Phys.: Condens. Matter 26, 279501 (2014). [4] arXiv: 1411.1376.

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