

Abstract Submitted  
for the MAR13 Meeting of  
The American Physical Society

**Graphene multilayers as hyperbolic metamaterials** ASHLEY DASILVA, ALLAN MACDONALD, University of Texas Austin — Graphene and multilayer graphene systems show promise for numerous electronic and optical applications in part due to the extraordinary tunability of graphene via gate voltage. We discuss the optical properties of electrically decoupled multilayer graphene systems. These can be described by the reflection and transmission coefficients, which we calculate using a transfer matrix approach. This point of view allows an explicit comparison between graphene multilayers and metal/dielectric multilayer metamaterials. In particular, we will compare multilayer graphene systems to hyperbolic metamaterials which have extreme anisotropy in the effective dielectric constant:  $\epsilon_x = \epsilon_y < 0$  and  $\epsilon_z > 0$ .

Ashley DaSilva  
University of Texas Austin

Date submitted: 09 Nov 2012

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