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**Wei Li\*** ([wei.li@depaul.edu](mailto:wei.li@depaul.edu)), **Robert Lipton** and **Matthias Maier**. *Lorentz Resonance in the Homogenization of Plasmonic Crystals.*

We explain the sharp Lorentz resonances in plasmonic crystals that consist of 2D nano dielectric inclusions as the interaction between resonant material properties and geometric resonances of electrostatic nature. One example of such plasmonic crystals are graphene nanosheets that are periodically arranged within a non-magnetic bulk dielectric. We derive an analytic formula for the Lorentz resonances which decouples the geometric contribution and the frequency dependence. This formula comes rigorously from the corrector equation in the process of homogenization, and it can be used for efficient computation. This is joint work with Robert Lipton and Matthias Maier. (Received March 03, 2021)