

Abstract Submitted
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Calculating Observable Quantities for the Hofstadter-Type Spectrum of Graphene LIUBOV ZHEMCHUZHNA, Hunter College, CUNY, DANHONG HUANG, Air Force Research Laboratory, Space Vehicles Directorate, GODFREY GUMBS, Hunter College, CUNY and Donostia International Physics Center (DIPC), ANDRII IUROV, CHTM, University of New Mexico and Hunter College CUNY, SANJAY KRISHNA, CHTM, University of New Mexico — We numerically obtain density of states and the conductivity of the periodically modulated graphene in the presence of magnetic field. These quantities play most important role since they could be measured directly in experiment, so we compare our results with those from the existing experimental papers. The density of states has been calculated and shows a remarkable self-similarity like the energy bands. We estimate that for modulation period of 10 nm the region where the Hofstadter butterfly is revealed at $B \leq 2T$. Both single layer and bilayer graphene have been considered.

[1] Godfrey Gumbs, Andrii Iurov, Danhong Huang, and Liubov Zhemchuzhna: *Revealing Hofstadter Spectrum for Graphene in a Periodic Potential*, Physical Review B **89**, 241407(R) (**Rapid Communications**) (2014).

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