

# Wave packet dynamics in graphene nanostructures

E. Romera<sup>1</sup>, N. A. Cordero<sup>2</sup>, T. García<sup>1</sup>, I. G. Ayala<sup>2</sup>, and F. de los Santos<sup>3</sup>

<sup>1</sup>Departamento de Física Atómica, Molecular y Nuclear, Instituto Carlos I de Física Teórica y Computacional, Universidad de Granada, Campus Fuentenueva E-18071 Granada, Spain.

<sup>2</sup>Departamento de Física, Universidad de Burgos. Spain.

<sup>3</sup>Departamento de Física Atómica, Molecular y Nuclear, Instituto Carlos I de Física Teórica y Computacional, Universidad de Granada, Campus Fuentenueva E-18071 Granada, Spain.

[eromera@ugr.es](mailto:eromera@ugr.es)

## Abstract

We have studied the existence of quantum revivals in graphene quantum nanostructures within a theoretical framework. The time evolution of a Gaussianly populated wave packet show revivals in monolayer and bilayer graphene structures (quantum dots and quantum rings). We have also studied this behavior for these nanostructures in magnetic fields.

## References

- [1] E. Romera, F. de los Santos, Phys. Rev. B 80 (2009) 165416.
- [2] E. Romera and J. J. Torres, Phys. Rev. B 82 (2010) 155419.
- [3] E. Romera and J. J. Torres, AIP advances 2 (2012) 042121.
- [4] T. García, S. Rodríguez-Bolivar, N. Cordero and E. Romera, Preprint. 2013.