

# Graphene on the magnetic substrate with a domain wall

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Graphene is a two-dimensional material which is interesting for theoretical and experimental investigations. In this work, we present electronic band structure of a graphene deposited on a magnetic layer with a single sharp magnetic domain wall. To describe the system we also include Rashba spin-orbit coupling. The electronic structure includes the four bands with a bandgap proportional to magnetization  $M$ . From the Schrodinger equation we also find states localized at the domain wall, which appear inside the band gap. We observe strong oscillations of the spin density for low electron energy, with the spin along a direction parallel to the magnetic domain wall.

## References:

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