

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Trapping electrons in graphene in a rotating saddle JOHAN NILSSON, University of Gothenburg — We consider particle motion in rotating saddle-shaped potentials. It is known that such rotating potentials can generate bounded motion for particles with a parabolic dispersion law through the combination of potential, centrifugal and Coriolis forces in the rotating frame. When applied to massless Dirac particles, for example electrons in graphene, such a potential is shown to lead to eigenstates that are spatially localized near the center of the saddle at certain energies. Although other states also exist at these energies, they have non-overlapping support in the oscillator basis, which tend to give the localized states a substantial life-time also when imperfections are present. Reference: J. Nilsson, PRL 111, 100403 (2013).

Johan Nilsson
University of Gothenburg

Date submitted: 10 Nov 2013

Electronic form version 1.4