Simon Becker

Title: Magnetic Oscillations in Graphene

Abstract: We consider the simplest model of graphene in a magnetic field given by a hexagonal quantum graph. Using semi-classical methods (with the strength of the magnetic field as the small parameter) we obtain a geometric description of the density of states showing asymmetry seen in physical experiments but not in commonly used perfect cone approximations. That density of states can then be used to see magnetic oscillations such as the de Haas-van Alphen effect. Joint work with M Zworski.