

SEMINÁŘ OTF ÚJF, ŘEŽ

VÍT JAKUBSKÝ

(ÚJF AV ČR, Řež)

**Perfect tunneling in carbon nanostructures
and the free-particle dynamics**

Abstrakt

We will review the basic theoretical description of graphene and carbon nanotubes, the tight-binding model and its low-energy limit in particular. It is well known that the low-energy quasi-particles in graphene and in the metallic nanotubes can penetrate through the potential barriers without reflection, which is interpreted as a manifestation of Klein tunneling in this condensed matter system. We provide an alternative simple explanation of this phenomenon in terms of the free-particle dynamics.

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