

2pm, February 28th, Room 1201

Dirac Materials

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Recently a new single layer material -- graphene has been discovered. This is a material where Dirac points in the fermionic spectrum lead to a very unusual properties, such as transport properties and impurity states. I will argue that these properties are not unique to graphene and in fact are a direct consequence of Dirac spectrum in fermionic excitation sector. Strong similarities with d-wave superconductors, superfluid ^3He and with other materials exhibiting Dirac electronic spectrum are suggestive and offer a unifying perspective. I will argue that this discovery signifies the emergence of a new class of materials, that can be called “Dirac Materials”, the class where nontirivial properties emerge as a direct consequence of Dirac spectrum of excitations.

Host: Victor Yakovenko