



ALGEBRA SEMINAR TALK



WITH

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The University of Western Ontario

FRIDAY, OCTOBER 14, 2011

2:30 P.M. – Middlesex College Room 107

“Theory of Quantum Hall Effect in monolayer and bilayer graphene”

I describe the theory of the quantum Hall effect in monolayer and bilayer graphene based on the magnetic catalysis effect. The role of the symmetry and its breakdown in this phenomenon is discussed.



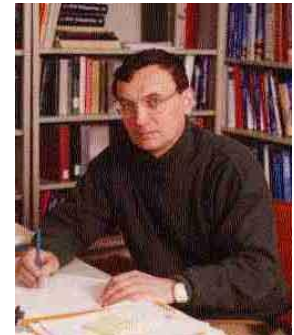
V. A. Miransky



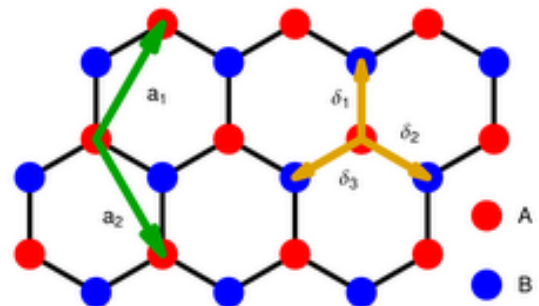
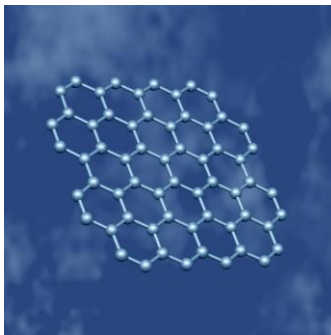
I. A. Shovkovy



E. V. Gorbar



V. P. Gusynin



There was excitement about the discovery by Born, that these strange noncommutative families of numbers in quantum mechanics discovered by Heisenberg, are actually matrices. These discoveries were followed by the work of Dirac, Weyl, and many others who made the marriage of algebra and quantum mechanics very dramatic. How does one use dynamics with symmetry to explain the Quantum Hall Effect in graphenes? It is a great pleasure to welcome Professor Vladimir Miransky, who can explain even some experiments which use low energy, with his typical high energy, engaging presentation of some fascinating recent developments in current physics.