

## **QUANTUM SEMINARS**

**Physics Dept. Theory Section,**  
**University of Trieste**



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### **Quantum dynamics in perturbed periodic structures**

May 4th, 4.30 PM, Seminar Room 204, ICTP building.

The dynamics of electrons in crystalline solids is effectively understood in terms of the semiclassical equations of motion (EoM) of solid state physics. Beyond the standard textbook equations, a more accurate analysis can be performed, yielding striking physical predictions, including a Berry-curvature induced transport, a piezoelectric current, and the modification of the “natural volume” in momentum space.

May 11th , 4.30 PM, Seminar Room 204, ICTP building.

In this second talk, I'll discuss the relevance of the Berry-curvature transport term in the context of the Quantum Hall effect. In particular, the Chern number of the Bloch bundle will be gently introduced, and its relation with the previous approach outlined.