

Colloquial talk take place at the Institute of Mathematics and Statistics, No.8 building within the Faculty of Science, Kotlarska 2, Brno

Time and place: **April 19, 4pm**, lecture hall **M1**

**Phan Thanh Nam**

### **Semiclassical analysis and Lieb-Thirring inequality**

#### **Abstract:**

In 1975, Lieb and Thirring found an elegant combination of uncertainty principle and Pauli's exclusion principle in terms of a lower bound on the kinetic energy. Their bound agrees with the semiclassical approximation used in the Thomas-Fermi theory, up to a constant factor. It has been a long-standing conjecture that the sharp constant coincides with the semiclassical one. In the talk, I will prove a Lieb-Thirring type inequality with the sharp constant and a gradient error term which is of lower order.