Announcement

Scattering Theory

Description

The observation and analysis of particle and wave scattering plays a crucial role in physics; numerous important discoveries, including not only nuclear fission, are the direct result of collision experiments. Other example is provided by the field of ultra-cold atoms and molecules, which has been experiencing enormous growth in recent years, largely triggered by the successful realization of Bose–Einstein condensates of dilute atomic gases.

This special lecture series provides students with a Bachelor or Master degree with the introduction into theory of scattering within the context of classical particle mechanics and quantum mechanics.

Content

The course explores

- classical and quantum-mechanic particles interacting by central and non-central potentials in one, two, and three spatial dimensions
- elastic and inelastic scattering
- three-particle collisions
- analytical properties of scattering amplitude and cross-section
- dispersion relations and inverse scattering problems

Literature


Additional Information

**Duration**: one semester, 3 hours (lectures) and 2 hours (tutorials) per a week

**Homework**: weekly, a few exercises, two hours to work on

**Lecturer**

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