



### **The Course 'Physics of the Interstellar Medium' (Winter Semester 98-99)**

The interstellar medium, representing a mixture of various particles and different fields, covers most of the space in and around galaxies. It is a fascinating laboratory to study astrophysical processes leading to formation and assembly of structures on different scales in galaxies. The physics of the interstellar medium plays an essential role in many areas of astronomy. Galaxy formation and evolution, the formation of stars and planets, and cosmic magnetic fields are intimately coupled to the physics of the interstellar medium.

This course is intended to give students a broad knowledge of the physics of various constituents and phases of the interstellar medium and their interaction, radiation mechanisms, thermal and non-thermal processes, and observational methods to trace the different ISM components and measuring their physical properties.

The topic is a very vital research area in modern astrophysics and hence is a fast-evolving topic. Therefore, besides the available text books, new articles will be used as reference. Paper reading and leading discussions will be also part of the student activity and assessment.

Since radio astronomy plays a crucial role in the ISM studies, a couple of introductory classes will be included in this course which will be preparatory to the planned radio astronomy school in July 2020.

**Course Meetings: Tuesdays 9:00 to 12:00 .**

Prerequisites: Familiarity with Basic Astronomy; good knowledge of Thermodynamics, Electrodynamics, and Quantum Mechanics.

#### **Contact:**

Dr. Fatemeh Tabatabaei: [ftaba \[at\]ipm.ir](mailto:ftaba@ipm.ir)

[Astro\[at\]ipm.ir](mailto:Astro@ipm.ir)

Tel: 26130674-5