Introduction to Plasma Physics

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The course will give a brief introduction to plasma physics and its space applications. It will consist of two independent periods separated by a month; the first week (10 - 13 March) is introductory, the second week (15-17 April) will be devoted to applications and specialised topics on space science.

Open to Ph.D., master, graduate and last course undergraduate students

Second week
From13:50 to 15:40 (with a 5 minutes break)
Seminar of the Department d'Astronomia i Meteorologia (seven floor)
Facultat de Fisica. Universitat de Barcelona
Contacte: Blai Sanahuja (934021131; Blai.Sanahuja@ub.edu)

Week 2 – Space applications of plasma physics

April 15. Lecture 5

Exercises (50 min)
- The main points of the solutions to the homework problems presented

Topics from the first week shortly revisited (50 min)

April 16. Lecture 6

The solar corona and solar wind (100 min)
- Photospheric boundary conditions
- Coronal plasma and magnetic field, coronal heating models
- Solar wind

Diagnostic techniques
- In-situ plasma instruments (plasma particles and magnetic fields)

April 17. Lecture 7

Solar activity and solar eruptions (100 min)
- Solar flares and coronal mass ejections
- Solar energetic particle acceleration and transport

Example of instruments
- Solar Intensity X-ray and Particle Spectrometer on-board BepiColombo spacecraft