



UNIVERSITÀ
degli STUDI
di CATANIA

DIPARTIMENTO DI FISICA E ASTRONOMIA

DOTTORATO DI RICERCA IN FISICA

CICLO XXXVII
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Sun-Earth connection and Space Weather

2 CFU

Teaching staff

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Program of the course:

The Sun: a general overview – Solar interior – Solar atmosphere - Solar magnetism and the 11-year cycle - Dynamo mechanism – Activity phenomena – Flares : observations and models - Coronal Mass Ejections: observations and models – Solar Wind.

The Interplanetary Magnetic Field – The Earth's Magnetosphere – Impact of solar phenomena on the magnetosphere of the Earth – Space Weather effects: magnetic storms, aurorae, ionospheric perturbations – Impact of Space Weather on technological systems.

Bibliography:

- C. Chiuderi & M. Velli: Fisica del Plasma: Fondamenti e applicazioni astrofisiche, Springer - Verlag, 2012
- K. R. Lang : The Sun from Space, Springer, 2000
- E. Landi Degl'Innocenti : Fisica Solare, Springer Verlag, 2008
- E. R. Priest : Solar magnetohydrodynamics, Reidel Publ. Co., Dordrecht, 1984