



SCUOLA
NORMALE
SUPERIORE
PISA

SEMINARIO DI SISTEMI DINAMICI

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ore 15.30

Scuola Normale Superiore
Pisa
(Sala Riunioni Centro De Giorgi)

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Terrà un seminario dal titolo:

“Complex bodies as sections of fiber bundles and related variational problems”

Abstract:

Chapters of solid-state physics display examples of the phenomenology of materials—called ‘complex’—characterized by a drastic influence of microstructural mutations on the global mechanical behaviour. The setting is widespread: it embodies examples going from ferroelectrics to quasicrystals and biomaterials of various nature. Relevant models in terms of continuum field theories reveal the presence of structures which are common to large special classes of complex bodies. A general model-building framework unifying available theories then arises: it is also a flexible tool for the formulation of new special models for new materials. Its construction implies essential ‘slidings’ in the basic paradigms of traditional continuum mechanics. Non-trivial geometric and analytical problems appear: their list includes minimization of energies over classes of bodies rather than only classes of fields, transport of microstructures, hyperbolic equations involving manifold-valued maps, the use of geometric measure theory in the representation of the interactions amid material elements ad so on. Essential themes and some open problems of the mechanics of complex bodies are discussed in the seminar.

Tutti gli interessati sono invitati a partecipare.

La Segreteria della
Classe di Scienze