

COLLOQUIA 2016-2017

Giovedì 24 Novembre 2016

Aula 102 "L. Giulotto", ore 16.00

Dipartimento di Fisica, via Bassi 6, Pavia

How randomness controls the failure of disordered complex systems

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Abstract: The probability that materials fracture or that a complex system fails is ruled by extreme events. This is due to the presence of unavoidable randomness and leads to sample to sample fluctuations and non-trivial size dependence. I will illustrate this concept through a series of examples, from the mechanics of strong nanoscale materials like graphene to soft materials, such as colloidal crystals or collagen networks. Finally I will show that similar statistical properties describe the probability for the aggregation of proteins relevant for neurodegenerative diseases.

