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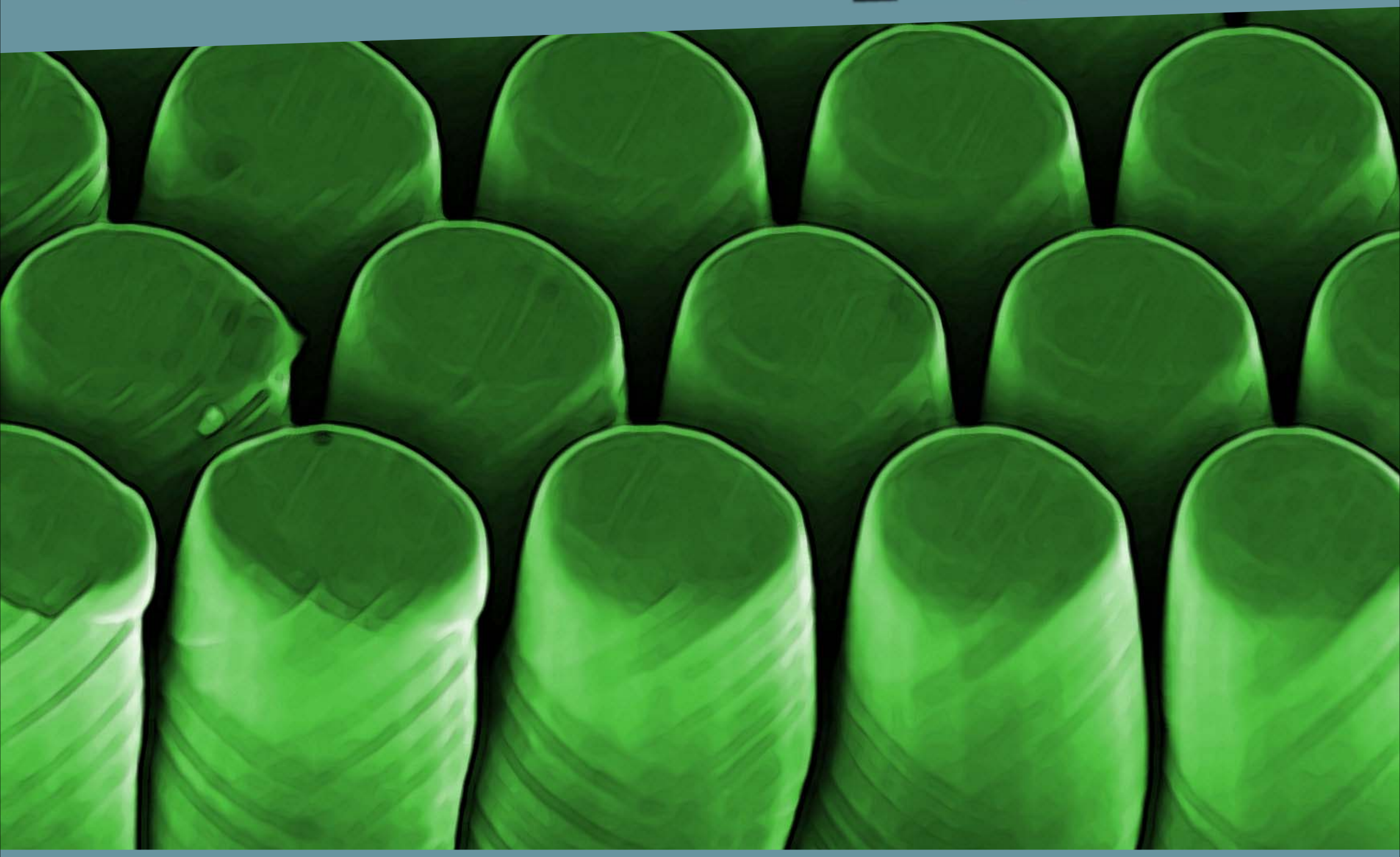
PHYSICS COLLOQUIA 2014



It is well established that material properties — mechanical, magnetic, electrical — are affected by the presence of disorder, structural inhomogeneities and defects. For this reason, materials response and device functioning are often associated with crackling noise, characterised by impulsive events spanning a broad range of sizes. While representing a nuisance in many practical applications, the statistical properties of crackling noise provide useful information about the internal dynamics of the materials, forming the basis for non-destructive testing devices. The viability of this approach relies on appropriate statistical measures linking the macroscopic response to the microscopic dynamics. In this lecture, I will discuss how the statistical mechanics of non-equilibrium phase transitions provides the natural framework to understand crackling noise in widely different contexts ranging from ferromagnetism and micro-plasticity to biology.

Stefano Zapperi
CNR-IENI, Milano, Italia

20 MAY

Crackling Noise

UNIVERSITÀ DEGLI STUDI DI MILANO
DOTTORATO DI RICERCA IN FISICA
ASTROFISICA E FISICA APPLICATA

Gli incontri si terranno alle **ore 15:00**
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