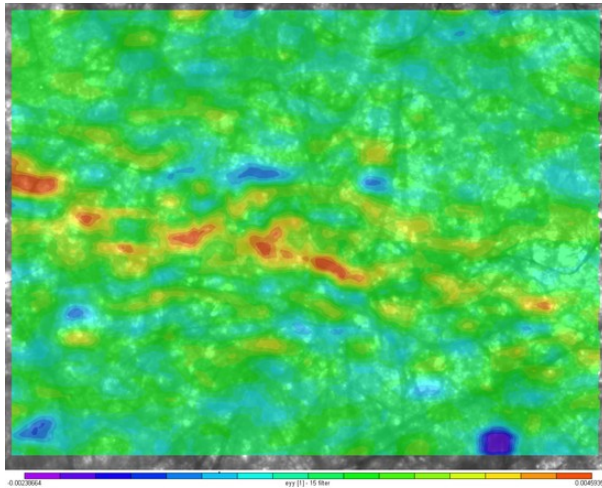




## Dynamical hysteresis in plastic deformation



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Dislocation dynamics under external stresses has recently been understood to be intimately connected to non-equilibrium phase transitions. In idealized systems and models the crucial concept is the yield stress, which here defines a critical point. In our recent work (Laurson, Alava, Phys. Rev. Lett. 109, 155504 (2012)) we have studied what happens in the deformation of crystalline materials under time-dependent stresses. It turns out to be so that this is directly connected to generic features of dynamical hysteresis in various systems, and the behavior of a model two-dimensional discrete dislocation dynamics model also tells a lot about the yielding in general and the transition in particular.

**Mercoledì 20 mar 2013 - ore 11:00**  
**via R. Cozzi, 53 - Milano**  
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