

Spatiotemporal correlations between plastic events in the shear flow of athermal amorphous solids: Short movies

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In order to show the dynamical organisation of rearrangements in the material, we provide short movies of the system under deformation, in which the plastic regions are coloured. Because the shear rates under study span three orders of magnitude, we have sped up the movies as follows: for $\dot{\gamma} = 10^{-5}$, one second of video corresponds to a deformation window of $\Delta\gamma(1s) = 10^{-4}$; for $\dot{\gamma} = 10^{-4}$, $\Delta\gamma(1s) = 10^{-3}$; and, finally, for $\dot{\gamma} = 10^{-3}$, $\Delta\gamma(1s) = 5 \cdot 10^{-3}$.

The '*_MD' extension in the file names refers to the molecular dynamics simulations. The whole simulation cell is represented, and regions with large D_{min}^2 values are coloured in red.

The '*_Meso' extension in the file names refers to the coarse-grained model. We have zoomed on a region of 40x40 blocks, which is equivalent in size to the MD simulation cell. Plastic blocks are coloured, in red if they have yielded along the macroscopic shear direction, in bluer tones if the angle of yield is along a diagonal direction. Colours fade away as the plastic events reach their end.