

Universal plasticity in amorphous solids with implications to the glass transition

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I will review recent advances in understanding the nature of the plastic instabilities in amorphous solids, identifying them with eigenvalues of the Hessian matrix hitting zero via a saddle node bifurcation. This simple singularity determines exactly interesting exponents of system size dependence of average stress and energy drops in elasto-plastic flows. Finally I will tie these insights to the existence of a static length scale that increases rapidly with the approach to the glass transition.