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Exploring relaxation pathways in rheology and aging of jammed soft solids

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Stress heterogeneities frozen-in upon solidification, elasticity, structural disorder and thermal fluctuations conspire to select, in jammed soft solids, the microscopic relaxation pathways that ultimately determine their mechanical response as well as their progressive aging over time. We have used 3d numerical simulations of model solids to unravel such interplay and gain new insights into the nature of the relaxation pathways, their relevant time and lengthscales, and their dependence on the nature of the stress fluctuations in the material. Ill review our recent findings and discuss their implications for soft excitations in different types of jammed soft solids.