

Abstract Submitted  
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**Dynamics of a colloidal glass during stress-mediated structural arrest**<sup>1</sup> AJAY NEGI, CHINEDUM OSUJI, Department of Chemical Engineering, Yale University — We employ parallel superposition rheology to study the dynamics of an aging colloidal glass in the presence of a mean field stress. Over a range of intermediate stresses, the loss modulus exceeds the storage modulus at short times but develops a maximum concomitant with a crossover between the two as the system ages. This is attended by a narrowing of the loss peak on increasing stress. We show that this feature is characteristic of the structural arrest in these materials, which is made observable on reasonable timescales by the activating influence of the stress. The arrest time displays an exponential dependence on inverse stress. These results provide experimental validation of the role of stress as an effective temperature in soft glassy systems as has been advanced in recent theoretical frameworks.

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