

Abstract Submitted
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Collapse of Experimental Colloidal Aging using Record Dynamics¹ DOMINIC ROBE, STEFAN BOETTCHER, Emory University, PAOLO SIBANI, Syddansk Universitet, PETER YUNKER, Georgia Institute of Technology — The theoretical framework of record dynamics (RD) posits that aging behavior in jammed systems is controlled by short, rare events involving activation of only a few degrees of freedom. RD predicts dynamics in an aging system to progress with the logarithm of t/t_w . This prediction has been verified through new analysis of experimental data on an aging 2D colloidal system. MSD and persistence curves spanning three orders of magnitude in waiting time are collapsed. These predictions have also been found consistent with a number of experiments and simulations, but verification of the specific assumptions that RD makes about the underlying statistics of these rare events has been elusive. Here the observation of individual particles allows for the first time the direct verification of the assumptions about event rates and sizes. [D. Robe, et al., EuroPhys. Lett. (to appear, <https://arxiv.org/abs/1608.03869>)]

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