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**Creep dynamics in soft matter** RAFFAELA CABRIOLU, Université Joseph Fourier — Detecting any precursors of failure in Soft Matter Systems (SMS) is an inter-disciplinary topic with important applications (e.g. prediction of failure in engineering processes). Further, it provides an ideal benchmark to understand how mechanical stress and failure impacts the flow properties of amorphous condensed matter. Furthermore, some SMS are viscoelastic, flowing like viscous liquids or deforming like a solid according to applied forces. Often SMS are fragile and local rearrangements trigger catastrophic macroscopic failure. Despite the importance of the topic little is known on the local creep dynamics [1,2] before the occurrence of such catastrophic events [3,4]. To study creep and failure at an atomic/molecular level and at time scales that are not easily accessible by experiments we chose to carry out microscopic simulations. In this work we present the response of a colloidal system to uniaxial tensile stress applied and we compare our results to experimental works [8]. References: [1] Schurtenberger et al., J. Phys. Chem. 95, 4173 (1991). [2] Bauer et al., Phys. Rev. Lett. 97, 258303 (2006) [3] Chaudhuri P. et al., Phys. Rev. E 88, 040301 (2013). [4] Zausch J. et al., J. Phys. Condens. Matter 20, 404210 (2008).

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