

Glasses and (bi)-gel under (Oscillatory) deformation

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The presentation will be divided in two parts. In the first part, I will discuss the unusual scenario that emerges when a glass former undergoes oscillatory deformation. There will be indication for a dynamic transition [1] as well as unusual memory effects [2]. In the second part, I will introduce some doubly percolating networks (bigels) that results from an arrested demixing [3] and I will discuss some preliminary results on their peculiar mechanical behavior [4].

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- [1] D. Fiocco, G. Foffi, and S. Sastry, *Physical Review E* **88**, 020301 (2013).
- [2] D. Fiocco, G. Foffi, and S. Sastry, *Physical Review Letters* **112**, 025702 (2014).
- [3] F. Varrato, L. Di Michele, M. Belushkin, N. Dorsaz, S. H. Nathan, E. Eiser, and G. Foffi, *Proceedings of the National Academy of Sciences of the United States of America* **109**, 19155 (2012).
- [4] L. Di Michele, D. Fiocco, F. Varrato, S. Sastry, E. Eiser, and G. Foffi, *Soft Matter* **10**, 3633 (2014).