

Abstract Submitted
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Modeling the toughness of metallic glasses CHRIS RYCROFT, Harvard University, ERAN BOUCHBINDER, Weizmann Institute of Science — Metallic glasses are a new type of alloy whose atoms form an amorphous structure in contrast to most metals. They have many favorable properties such as excellent wear resistance and high tensile strength, but are prone to breakage in some circumstances, depending on their method of preparation. This talk will describe the development of a quasi-static projection method in an Eulerian finite-difference framework, for simulating a physical model of a metallic glass based on the shear transformation zone theory. The simulations are capable of resolving the multiple timescales that are involved, and provide an explanation of the experimentally observed differences in breakage strength.

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