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**Fiber networks below the isostatic point: fracture without stress concentration** LEYOU ZHANG, Univ of Michigan - Ann Arbor, D. ZEB ROCKLIN, Cornell University, LEONARD M. SANDER, XIAOMING MAO, Univ of Michigan - Ann Arbor — The fracturing of elastic material in the over-damped condition is usually controlled by the stress concentration at crack tips. In this talk, we discuss our recent studies on the fracturing of fiber networks, which are below the central-force isostatic point and their deformations are dominated by bending of the fibers. We find that in these fiber networks there is a unique phase of fracturing that is characterized by fractal diffusive cracks, small avalanches, and a steady state of force chain generation and breaking. Most strikingly, there is no stress concentration at any scale in these networks. Interestingly, the entire phase is critical so no fine tuning is required to observe this phase. Finally I will discuss the implications on experiments.

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