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**Stress Localization in Elastic Shells** SARAH SELDEN, ARTHUR EVANS, NAKUL BENDE, RYAN HAYWARD, CHRISTIAN SANTANGELO, Univ of Mass - Amherst — Upon indentation, thin shells react by localizing strain energy in polygonal structures as opposed to a uniform axisymmetric distribution. While the formation of these localized structures are well-characterized for perfect shells, a change in shell thickness or the introduction of a crease fundamentally changes the nature of the shell deformation. We perform finite element simulations, in tandem with experiments to explore the effect of different shell geometries on the energy landscape. We find that the crease induces a new symmetry-breaking localization that does not appear in perfect shells, and we explore the deformation characteristics of the creased shell over a wide range of crease radii, and crease orientations.

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