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**Stress Focusing in Creased 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, 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 a creased shell 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 sizes, shell thickness, and crease orientations.

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