

Abstract Submitted
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The First-Ever High Speed Video Capturing the "Snap" Transition of a Bimetallic Disc CHRIS WONG, L. D. Sunding, N.C. Keim, N.C. Heston — Heating and cooling of snap-acting bimetallic discs (SABMDs) induces rapid transitions (snaps) between concave and convex equilibrium states. Additionally, thermal stress causes the shape expressed by a disc to change significantly at temperatures near the snapping temperatures. The typical size of commercially produced SABMDs is 2-3 cm in diameter. Here we present a new fabrication method for large-scale discs which we've employed to create the world's biggest SABMDs with diameters up to 15 cm. This new larger class of discs transition on a longer time scale compared to their smaller counterparts. This has allowed us to capture the first high-speed videos fully documenting the transition process. We present these findings in addition to precision measurements showing the shape of discs as they change with temperature prior to the dynamic snapping process.

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