Poking around: how indentation reveals wrinkly isometries DOMINIC VELLA, University of Oxford, HAMID EBRAHIMI, Northeastern University , JOSEPH PAULSEN, Syracuse University, ASHKAN VAZIRI, Northeastern University, NARAYANAN MENON, BENNY DAVIDOVITCH, UMass Amherst — When deforming extremely thin objects, deformation via stretching is relatively expensive. It is therefore natural to seek deformations that preserve lengths, or isometries. Two common examples of such isometries in mechanics are the 'd'-cone (for a plate) and 'mirror buckling' (for a shell). I will show two examples for which the presence of a weak tension means that these isometries are not obtained experimentally. Instead, the systems in question wrinkle and tend to new 'wrinkly isometries': isometries that are only available to a wrinkled object.

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