

Buffering by buckling: New wrinkles on Gauss' Pizza Theorem

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Abstract

The deformations of thin elastic objects are familiar from everyday life, from a piece of paper or clothes crumpling, to vibrations of bridges and other structures. A guiding principle of such deformations is that the material chooses to bend, rather than change its length, whenever possible. I will describe some of the consequences of this desire to avoid stretching and Gauss' Remarkable Theorem, which include everyday examples like the geometrical rigidification of pizza slices by curving the crust. However, I will show that these consequences can be subverted by buckling instabilities such as wrinkling. Finally, I will talk about how fast these deformations happen.

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