## The physics of fitting in: from stinging nettles to telescoping cardboard boxes

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Snuggly fitting objects in relative motion are ubiquitous in both nature and technology. In this talk, we first consider stringing mechanics with a particular focus on the relation between size and elastic stability during the penetration process. Natural and artificial spikes are compared in determining the most durable yet economical design. In the second half of the talk, we discuss the closing dynamics of telescopic cardboard boxes. The lid's characteristic slow vertical sliding movement is controlled by viscous flow in a thin film of air in the gap separating the cover and the box's base. If the lid and base fit tightly, it is difficult for the consumer to remove the lid. By contrast, if the cap is loose, it can accidentally open and damage the content. A properly sized lid provides an appropriate tradeoff between safety and convenience. Yet, the time and hence cost required to close the lid before shipment or storage may still be significant. We discuss this process and the dependence of the closing dynamics on physical and geometric parameters.



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