

Abstract Submitted  
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**Explaining Relativity with Globes, Cylinders and Balloons<sup>1</sup>**

ARNO VIGEN, None — I present a visual method to explain the abstract physics concept of relativity. Part 1 explains the physical model where changes in radial distance impact other dimensions – blowing up a balloon. When I blow up a balloon, the radius changes, but the longitude and latitude distance scale also increases pro rata (covariant). Yet, when I move on the surface, the radial distance does not change (invariant). This provides a physical causation model for visual students to understand those relativity concepts. Part 2 explains the Einstein 4x4 as springs connecting spheres and cylinders to generate tension in that physical system. Energy if the cylinder (longitudinal rings of electrons) changes until the globe catches up. The spring gets stressed until the sphere, really hemispheres as the critical axis is on a globe, moves to match a cylinder change (rotation).

<sup>1</sup>None

Arno Vigen  
None

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