Pea Bodies of Constant Width

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Besides the two Meissner solids, the obvious constant width bodies of revolution, and the Meissner polyhedra, there are few concrete examples of bodies of constant width or a concrete finite procedure to construct them. In this talk, we will describe an infinite family of 3-dimensional bodies of constant width obtained from the Reuleaux Tetrahedron by replacing a small neighborhood of all six edges with sections of an envelope of spheres using the classical notion of confocal quadrics. This family includes Meissner solids as well as one with tetrahedral symmetry. (Joint work with I. Arelio and L. Montejano).