
NEW FREE BOUNDARY MINIMAL ANNULI OF REVOLUTION IN THE 3-SPHERE

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I will describe the main ideas behind my recent preprint establishing the existence of explicit free boundary minimal annuli in the 3-sphere. These arise as compact pieces of complete minimal surfaces of revolution described long ago by Otsuki (1970) and do Carmo and Dajczer (1983) and have interesting connections to a recent extremal eigenvalue problem considered by Lima and Menezes (2023). In contrast to the Euclidean case, in this setting we quickly obtain a variety of examples which may be embedded or self-intersecting, contained in a geodesic ball or not.