

# **DELAUNAY-TYPE COMPACT EQUILIBRIA IN THE LIQUID DROP MODEL**

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This work addresses the liquid drop model, introduced by Gamow in 1930 and Bohr-Wheeler in 1939 in nuclear physics to describe the structure of atomic nuclei. The problem involves finding a surface in three-dimensional space that is critical for a specific energy of the regions under consideration. The model balances two energy terms, subject to a volume constraint. Spherical solutions are always possible and minimize the energy for sufficiently small volumes. However, for larger volumes, finding non-minimizing solutions becomes more challenging. In this study, we present a new class of solutions with large volumes, resembling "pearl collars" arranged along an axis in the shape of a large circle, with geometry close to Delaunay's unduloid surface with constant mean curvature. This is joint work with Mónica Musso and Andrés Zúñiga