

## The vacuum strikes back: Black stars

*Wednesday, 30 August 2023 15:00 (20 minutes)*

I will show that the repulsive effects associated to the zero-point energies of quantum fields are capable of supporting ultracompact stars that overcome the compactness limits present in general relativity for any sphere in hydrostatic equilibrium. These objects are self-consistent solutions in semiclassical gravity that incorporate the backreaction of the renormalized stress-energy tensor (RSET) of quantum fields in vacuum. We arrive at stars of striking qualitative agreement through two independent modelings of the RSET, evidencing the generality and robustness of this result. The main physical properties of these novel black hole mimickers are reviewed.

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