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# Anomalies and the stability of stars

*Friday, 1 September 2023 10:30 (40 minutes)*

What are the essential aspects of quantum theory needed in order to understand compact relativistic objects? Relying solely on universal properties of QFTs at high energies, we show that as a star contracts towards its Buchdahl radius the effects of the trace anomaly become macroscopic at densities much below the Planck scale. As a consequence the unstable modes of scalar fields disappear, implying the system recovers linear stability under scalar perturbations.

**Presenter:** REYES, Ignacio

**Session Classification:** Morning session 1