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## **Q-balls with an Attractive Force**

Tuesday 25 March 2025 15:45 (15 minutes)

We consider the Friedberg-Lee-Sirlin Q-ball with a renormalizable cubic interaction. This attractive Yukawa interaction balances the quartic interaction and results in more compact Q-balls with a maximum stable charge. We show that our numerical simulations match our analytic calculations of the maximum charge. Additionally, we consider the fate of these unstable Q-balls with excess charge, and their possible implications for cosmology.

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