

## High Energy Physics - Theory

# Investigation of restricted baby Skyrme models

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A restriction of the baby Skyrme model consisting of the quartic and potential terms only is investigated in detail for a wide range of potentials. Further, its properties are compared with those of the corresponding full baby Skyrme models. We find that topological (charge) as well as geometrical (nucleus/shell shape) features of baby skyrmions are captured already by the soliton solutions of the restricted model. Further, we find a coincidence between the compact or non-compact nature of solitons in the restricted model, on the one hand, and the existence or non-existence of multi-skyrmions in the full baby Skyrme model, on the other hand.

Comments: latex, 18 pages, 2 figures; some typos corrected

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