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BPS Skyrme model and neutron stars, a two-fold approach

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The Skyrme model was conceived as a low energy effective field theory of strong interactions where the fundamental degrees of freedom are the pions and nuclei appear as collective excitations. In this talk, we will focus on a special case of these Skyrme theories called BPS Skyrme Model, which allows for a good description of binding energies of high nuclei. Further, here we will present two different approaches to the study of neutron stars. On the one hand, a full theory description with the gravity back-reaction taken into account. On the other hand, a mean-field approach allowing to the usual TOV calculations. Other interesting new results will be presented.

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