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Gravitational form factors of the baryon octet and their stability conditions with flavor SU(3) symmetry breaking

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We investigate the gravitational form factors of the baryon octet within the framework of the chiral quark-soliton model, also known as the pion mean-field approach, emphasizing the effects of flavor SU(3) symmetry breaking on the form factors. The D-term form factors provide information on the stability conditions of the baryon octet in terms of the pressures and shear forces inside them. We show explicitly that the stability conditions are well preserved in the presence of flavor SU(3) symmetry breaking. We also discuss various physical implications of the gravitational form factors of the SU(3) baryon octet.

Present via

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