

EXOTIC BARYONS FROM THE CHIRAL QUARK SOLITON MODEL

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S u m m a r y

From the interpretation of the $\Theta^+(1540)$ and $\Xi_{3/2}(1862)$ baryons as an excitation of the “skyrmion liquid” with SU(3) flavour symmetry $\overline{10}$, we deduce a new series of baryons, Θ_1^{++} , Θ_1^+ , and Θ_1^0 situated at the top of the 27-plet of SU(3) flavour, with hypercharge $Y = 2$, isospin $I = 1$, and spin $J = \frac{3}{2}$. The Θ_1 mass and width are estimated from the chiral quark soliton model. We demonstrate that the predicted mass, $m_{\Theta_1} = 1599$ MeV/ c^2 , and broad width are in qualitative conflict with experiment which shows no structure in the total K^+p cross section near $P_{\text{lab}} = 585$ MeV/ c . We also study properties of other exotic baryons from the 27- and 35-plets.