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Prediction of electric and magnetic form factors of $1/2^+$ octet hyperons and possible determination of their phase-difference.

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Abstract

Starting from a specific universal 9 resonance model of electromagnetic structure for all members of $1/2^+$ baryon octet, dependent only on ρ-, ω-,ϕ-coupling constant ratios as free parameters, then making a use of existing experimental information on nucleon electromagnetic form factors and SU(3) flavour symmetry, behaviuors of electric and magnetic form factors of Λ, Σ, and Ξ hyperons and their phase-differences are predicted. The latters can be determined experimentally at the $e^+e^- \to Y\bar{Y}$ processes by a measurement of y-component of the polarization $\vec{P}$ of one of the final hyperons, whereby the y-axis is orthogonal to the plane of the reaction.

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