

Parallel talk

An explanation of the $\Delta_{D35}(1930)$ as a $\rho\Delta$ bound state

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摘要

Constituent quark models based on two-body potentials systematically overpredict the mass of $\Delta_{D35}(1930)$. A possible solution to this problem comes out from the application of a schematic hybrid model, containing three-quark as well as meson-baryon components, to the light-quark baryon spectrum. The $\Delta_{D35}(1930)$ and its partners $\Delta_{D33}(1940)$ and $\Delta_{S31}(1900)$ are found to contain a significant $\rho\Delta$ component. Then, through the use of the hidden gauge formalism, it is shown that these resonances can be dynamically generated from the ρ - Δ interaction. In particular $\Delta_{D35}(1930)$ can be interpreted as being essentially a $\rho\Delta$ bound state. This interpretation suggests that the inclusion of $\rho\Delta$ as an effective inelastic channel in data analyses could improve the extraction and identification of the resonance.

关键词 [Baryon spectra, dynamically generated resonances, quark model](#)

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