

Study of static properties of Δ Baryon resonances in the relativistic potential model formalism

A relativistic model of independent quarks based on Dirac equation with an equally mixed scalar-vector square root confining potential is used to compute the quark core contributions to study the static properties like magnetic moments and charge radii of the Δ baryons with spin $\frac{1}{2}$ and spin $\frac{3}{2}$. The results obtained with inclusion of appropriate centre-of-mass motion corrections agree well with experimental values. The model is also extended to the study of magnetic moments of the quark core of baryons in the charmed and b-flavoured sectors and the overall predictions so obtained compare well with other model predictions. The outcomes from this study is expected to inspire for progresses and further unravelling other light baryons additionally to experimental facilities PANDA-GSI.

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