
MAGIC

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STUDY OF THE DECAY OF $f_2(1270)$

The light meson sector has been the subject of great interest in particle physics, especially in relation to the structure of some of these mesons, which is not completely established. The $f_2(1270)$ meson with quantum numbers $I^G(J^{PC}) = 0^+(2^{++})$, mass $m=1275.5\pm 0.8$ MeV, is considered, in the quark model, to be a simple quark-antiquark pair. However, in the literature we find several possible models for its internal structure, one of them is that the $f_2(1270)$ mixes with a tensor glueball of lowest mass, both having the same $J^{PC} = 2^{++}$. In this work we consider the possibility that $f_2(1270)$ has a glueball component in its structure, being a mixture of states $|\bar{3}, \bar{1}\rangle$, $|\bar{3}, \bar{3}\rangle$ and $|\bar{3}, \bar{5}\rangle$ in order to investigate the internal structure of the $f_2(1270)$ meson from the study of its radiative decay in $\gamma\rho$ (considered as being an $\bar{u} \pm \bar{d}$) and $\gamma\phi$ (considered as being an $s\bar{s}$) in the context of a Non-Relativistic Quark Model, from where we obtain the decay rates and compare them with the experimental data.

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