

Exotic Hadrons-A Case Study Of X(3872)

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Recent years have been an exciting period for hadronic spectroscopy. Along with discoveries of new single heavy and doubly heavy baryons, many states that do not seem to fit in the conventional quark-anti-quark (for mesons) or three quark (for baryon) pictures have been observed. One of the first candidates for a non-conventional meson was X(3872). Although there are many proposals for its structure, none is established without doubt. In this talk, puzzles presented by X(3872) will be presented along with possible answers to these puzzles. A heavy quark effective theory framework will be presented where X(3872) can be described as a mixture of a charmonium and a molecule. It will be shown that the properties of X(3872) can still be described assuming it to be an almost pure charmonium or an almost pure molecule. To clarify its nature, more experimental data is necessary.

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