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Effect of Coulomb interaction on bound state by strong interaction

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Compared to the strong interaction, the binding energy of the Coulomb interaction is about 1/1000, so it is usually neglected. However, the binding energy of X(3872) is extremely small compared to many other hadrons, suggesting that the effect of the Coulomb interaction must be considered. In this talk, we consider the bound state using Coulomb plus square well potential model. We numerically investigate the change in the binding energy when the attractive and repulsive Coulomb potential is added to an attractive well potential of range b. Focusing on the wave function, we clarify the nature of the bound state.

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