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طيف كتلة الهادرونات ثقيلة الكواركات

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Abstract : The spectrum of the upsilon meson system comprises bound states of a bottom quark and an anti-bottom quark called bottomonium. Upsilon is a massive meson of mass about 9.46 GeV. It was discovered by resonance peaks produced at certain energies in experiments involving the production of lepton pairs. The higher energy peaks are the excited states of . In this work, we calculate the mass spectrum of this system, using Dirac equation, which is a relativistic wave equation, and holds good for spin 1/2 particles. This equation is solved with two suitable models for the interaction potential between the constituent quarks of system using the WKB method. We developed a computer program to obtain the energy eigenvalues for different values of quantum number and for n = 0, 1, 2 and 3. Comparison of our results with experimental values shows good agreement especially for

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