

Probing the strong interaction with XYZ states

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The theory of the strong interaction, Quantum Chromodynamics, has been probed very successfully up to very high energies, for example using hadron production in electron-positron collisions. At low energy scales, the QCD potential is non-perturbative and still not fully understood.

One approach to obtain deeper insight into the non-perturbative regime of the strong interaction is the study of charmonium spectroscopy. e^+e^- annihilation provides a very clean environment to perform measurements of this kind.

A 'second charm revolution' has been sparked with the discovery of new 'XYZ' states, such as the X(3872) or the Y(4260) by the B factories Belle and BABAR, which do not fit into the conventional picture of quark-antiquark bound systems. Recently, a number of further, non-conventional bound states have been seen. In this talk, I will concentrate on some of the more exotic bound states recently discovered at BESIII, and show some of the connections between them being made.