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The New Charmonium Resonances

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The charmonium states - resonances made of a charmed quark and a charmed antiquark - have for thirty years represented the simplest strongly interacting system. To a good approximation these states could be understood as non-relativistic bound states with a static potential. The spin-dependent effects could be understood as simple perturbations. Coupling to the continuum of true charmed states provided a refinement. Discoveries at the B-factories and at the Tevatron collider have changed all this. I review these discoveries, the difficulties in describing them within the canonical picture, and possible non-canonical explanations.