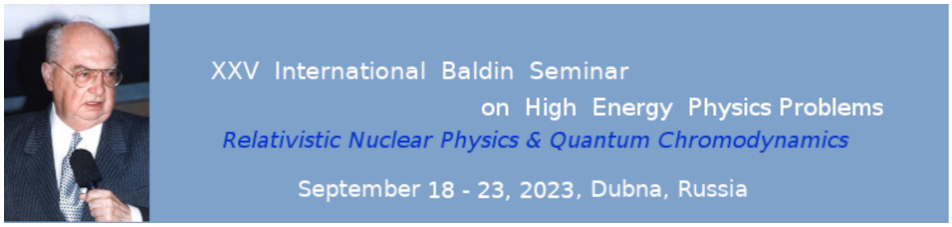

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Probing of exotic multiquark states in hadron and heavy ion collisions

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The spectroscopy of charmonium-like mesons with masses above the 2_mD open charm threshold has been full of surprises and remains poorly understood. The currently most compelling theoretical descriptions of the mysterious XYZ mesons attribute them to hybrid structure with a tightly bound diquark or tetraquark core that strongly couples to S-wave DD\bar molecular like structures. The production and decays of XYZ states into light hadron plus charmonum final states proceed via the core component of the meson, while decays to pairs of open-charmed mesons proceed via the DD\bar component. These ideas have been applied with some success to the XYZ states where a detailed calculation finds a cc\bar core component that is only above 5% of the time with the DD\bar component (mostly D0D0\bar) accounting for the rest. In this picture these states are compose of three disparate components: a small charmonium-like core with r_ms < 1 fm, a larger component with r_ms ≈ 1.5 fm and a dominant component with a huge, r_ms ≈ 9 fm spatial extent. The near threshold production experiments in √s_pN ~ 8GeV energy range with pp and pA collisions with √s_pN up to 26 GeV and luminosity up to 10^32cm^-2^-1 planned at NICA may be well suited to test this picture for the X(3872) and other exotic XYZ mesons. Their current experimental status together with hidden charm tetraquark candidates and present simulations what we might expect from A-dependence of XYZ mesons in pp and pA collisions are summarized.

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