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Exotics from Heavy Ion Collision

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Identifying hadronic molecular states and/or hadrons with multiquark components either with or without exotic quantum numbers is a long-standing challenge in hadronic physics. We suggest that studying the production of these hadrons in relativistic heavy ion collisions offers a promising resolution to this problem as yields of exotic hadrons are expected to be strongly affected by their structures. Using the coalescence model for hadron production, we find that, compared to the case of a nonexotic hadron with normal quark numbers, the yield of an exotic hadron is typically an order of magnitude smaller when it is a compact multiquark state and a factor of 2 or more larger when it is a loosely bound hadronic molecule. In this talk we give particular attention to the state $f_0(980)$ considering it as normal quark-antiquark state or as exotic (tetraquark or molecular) one.

On behalf of collaboration:

[Other]

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