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Top quark production at the $t\bar{t}$ threshold at CMS

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Near the top quark pair production threshold, non-relativistic QCD predicts an enhancement of $t\bar{t}$ production in pseudoscalar states. Color-singlet contributions are expected to produce a distinct resonance just below the $t\bar{t}$ threshold, offering a unique testable signature at the LHC. In this talk, we present the first observation of such a contribution in the dileptonic final state. In addition, we will discuss the first results in the lepton+jets channel, providing further evidence. These findings mark the beginning of a new chapter in top quark physics and open up a novel avenue for studying bound-state effects involving top quarks.

Secondary track

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