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Studies of beauty quark hadronization with B_S^0 in PbPb collisions with the CMS detector

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Beauty quarks are considered to be one of the best probes of the strongly interacting medium created in relativistic heavy-ion collisions as they are predominantly produced via initial hard scatterings. Measurements of B mesons provide information on the diffusion of beauty quarks as well as the flavor dependence of in-medium energy loss. In these studies, clarifying the hadronization mechanism is crucial for understanding the transport properties of beauty quarks. Measurements of B_S^0 production can shed light on the mechanisms of beauty recombination in the medium. In addition, measurements of the production of mesons containing both strange and beauty quarks can provide more information about strangeness enhancement in the quark-gluon plasma. Measurements of the ratio of B_S^0 over B^+ yields in PbPb collisions at a nucleon-nucleon center-of-mass energy of 5.02 TeV, using full reconstruction of the B mesons with the CMS detector, are presented.

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