

Abstract Submitted  
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**Search for NMSSM Higgs production with the CMS detector**  
AYSEN TATARINOV, Texas A&M University, CMS COLLABORATION — Light bosons weakly coupling to the Standard Model may appear in the context of Next-to-Minimal Supersymmetric Standard Model (NMSSM), which could resolve the tension between direct and indirect measurements of the Higgs mass. We present a search for the lightest CP-even Higgs boson ( $h_1$ ) decaying into two lightest CP-odd Higgs bosons ( $a_1$ ), followed by their decays into two pairs of collimated muons in the NMSSM. The search covers the lightest CP-odd Higgs boson ( $a_1$ ) mass from 0.25 to 3.5 GeV/ $c^2$  and sets upper limit on NMSSM Higgs boson production ( $\sigma \cdot \mathcal{B}$ ). It was performed using pp collisions data recorded by the CMS experiment at the LHC, at center-of-mass energy of 7 TeV, and corresponding to an integrated luminosity of 4.9 fb $^{-1}$ .

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