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**Trigger study for GMSB with photons** SHI-LEI ZANG, URIEL NAUENBERG, BERNADETTE HEYBURN, University of Colorado at Boulder, CMS COLLABORATION — We present a trigger study for the gauge-mediated SUSY breaking (GMSB) searches at CMS. As a result of the study, we propose to use two new high level triggers based on the electromagnetic calorimeter: EM-high- $E_T$  and EM-very-high- $E_T$ , along with the existing double-photon trigger. As a result of the study, we developed a new method for optimization of the trigger thresholds, which uses  $\log(\epsilon)/\log(b)$  as the optimization criteria, where  $\epsilon$  ( $b$ ) is the trigger efficiency for signal (background).

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