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Long lived NMSSM :Analysing some long lived NSLP signatures in the NMSSM

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We analyse NMSSM scenarios containing a singlino LSP dark matter. By systematically considering several NLSP compositions, we identify and classify regions of parameter space where NLSP exhibits a long lifetime due to suppressed couplings and leads to a displaced vertex signature at the colliders. We furthermore construct viable production and decay processes at the HL-LHC to search for such displaced vertices.

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