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BSM Hidden valley searches

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Sensitivity studies of the BSM Hidden Valley particles have been performed for the e^+e^- collisions at the centre-of-mass energy of 3 TeV in the CLIC detector, corresponding to an integrated luminosity of 2 ab^{-1} . Hidden Valley particles may be stable, providing dark matter candidates and missing energy signals, but others may decay into neutral combinations of Standard Model particles. Since the Higgs boson may also decay into two Hidden Valley particles, providing four b-jets in the final state which are away from the primary vertex and the beam axis, analysis relies on loosely reconstructed displaced vertices assigned to the b-jets. The final aim of the present analysis is to determine the upper limits of the cross sections for the Hidden Valley particle production for different masses and lifetimes.

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