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Search for chargino-neutralino pairs at LHC using MT2-MAOS reconstruction

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Several studies based upon the MT2-MAOS method [1] have shown the possibility of reconstructing the momenta of invisible particles in events produced at hadron colliders. This has opened an avenue to extract more informations about signals which are studied or searched for in events topologies having some missing transverse momentum (mET).

We present preliminary results of a realistic application of such a method in a simulated search for chargino-neutralino pairs decaying to $W(\rightarrow l\nu)+h(\rightarrow b\bar{b})+mET$ at the LHC Run 2.

In particular, we include the impact of the sub-detector finite resolutions, of the pile-up, and of the background surviving the event selection, on the reconstruction of the signal kinematics. We compare these preliminary results with those from the standard analysis techniques currently employed by the ATLAS and CMS for this search channel.

[1] arXiv:0810.4853v3, arXiv:0908.0079, arXiv:0909.4853 [hep-ph]

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