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Top quark mass measurement at the LHC and going beyond for a new physics search.

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Recently, CMS measured top-quark mass very precisely in a di-leptonic channel with the method which we invented for a new physics search at the LHC called one-dimensional decomposed MT2.

Di-leptonic $t\bar{t}$ channel has a common feature with SUSY type signatures which have a missing transverse energy coming from a dark matter candidate. The very important lesson that we've learned from CMS analysis is that this new technique is very robust at the LHC.

In this talk, I will explain the basic concept of the method that CMS used.

I also will present a way to expand this technique for the various new physics searches at the LHC, which was presented in [arXiv:1212.1720\[hep-ph\]](#)

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