



Contribution ID: 40

Type: poster

Preparations for BSM Seaches using the Top-Antitop invariant Mass Distribution in CMS

Tuesday, 12 October 2010 17:15 (10 minutes)

Preparations for BSM Seaches using the Top-Antitop invariant Mass Distribution

Contributed to be given at HQL2010: Heavy Quarks and Leptons 2010, 11-15 Oct 2010, Laboratori Nazionali di Frascati dell'INFN, Frascati (Italy) The talk is proposed to cms conf. comm..

Abstract

The top quark is the only known fermion with a mass of the order of the Scale of Electroweak Symmetry Breaking. New Physics beyond the Standard Model might be probed by studying the production of the top quark in proton-proton collisions at LHC energies. In many physics models beyond the Standard Model heavy new particles preferentially decaying to top pairs are predicted. The first long physics run of LHC is expected to take place at a center-of-mass energy of 7 TeV, and to go on until an integrated luminosity of about 1 inverse femptobarn has been collected. For such a scenario, we examine searches for resonances in the invariant mass spectrum of top-antitop pairs. While at low invariant masses (below 1 TeV), standard event reconstruction techniques can be used, the region of high invariant masses is more challenging. Due to the highly boosted top quarks, new methods for the selection and reconstruction of those events must be developed. We present the expected sensitivity to observe narrow resonances decaying into top-antitop pairs as a function of mass.

Files

Primary author: BIANCO, Stefano (INFN Frascati)

Presenter: WEINBERG, Marc (University of Wisconsin)

Session Classification: Poster

Track Classification: Poster