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The bottom and top quarks in warped models : LHC predictions from LEP/Tevatron anomalies

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Since a decade, there have been extensive developments about an alternative to supersymmetry: the scenarios with warped extra dimensions. Those constitute a new paradigm in the sense that they are dual, through the AdS/CFT correspondence, to composite Higgs models. These scenarios predict naturally strong deviations from the

Standard Model mainly in the bottom and top quark sector. In that sense, the LEP anomaly on Forward-Backward

bottom asymmetry (A^b_{FB}) and the recent Tevatron anomalies on the top asymmetry (A^t_{FB}) could be interpreted as

early signatures of the warped models. We will discuss warped model realizations allowing to explain both A^b_{FB} and A^t_{FB} [measured as a function of the $t\bar{t}$ invariant mass and the top rapidity], taking into account the constraints issued from dijet production rates at LHC.

The other constraints from the measurements of top pair production cross section $\sigma_{t\bar{t}}$ at LHC will be studied. Then, I will describe what are the predictions of these warped models at LHC, pointing out the complementarity between Tevatron and LHC on top physics.

There are typically two types of predicted signatures at LHC: a resonance peak in the $t\bar{t}$ invariant mass distribution (due to the exchange of a Kaluza-Klein excitation of the gluon) or the production of exotic colored fermions around a few hundred's of GeV.

The results presented here are based on some of our previous studies as well as on a work in progress.

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