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## A charged Z' to explain the apparent disagreement in top-antitop asymmetries between Tevatron and LHC

*Friday, 6 July 2012 14:45 (15 minutes)*

We propose a phenomenological model with a flavour changing electrically-neutral but not self-conjugated Z' to simultaneously explain the large Tevatron  $t\bar{t}$  forward-backward asymmetry and the compatible with zero LHC charge asymmetry. We find that the model produces a natural cancellation in  $p\bar{p}$  collisions which is suppressed in Tevatron's  $p\bar{p}$  collisions, leading to a large forward-backward asymmetry. Being not self-conjugated, the model is not affected by same-sign top pair production. We find the region in parameter space compatible with the mentioned observables in addition to the measured cross-sections. We propose easy distinctive features of the model which can be tested in differential charge asymmetry measurements.

### Financial Support Justification for Early-Stage Researchers

I'm a first year PhD student at Buenos Aires University (UBA) under the supervision of Ezequiel Álvarez and Daniel de Florian. My research group has already paid for the airfare, but the conference fee still presents a serious financial challenge for me to participate. I'm a young researcher from Argentina, and do not have access to the economic resources to attend this kind of conference. Participating in such an important event as ICHEP2012 would be very relevant for my career as I could have the opportunity to meet colleagues from all over the world working in my field, something that is difficult to accomplish living in this country, not only due to our economic situation as a developing country but also because of our geographical distance from much of the centres of scientific research. Working on phenomenology requires constant contact with experimental results and conferences such as these are crucial in developing relationships with scientists actively involved in my area of research. Furthermore, since I'm in the first year of my PhD, giving a presentation could be a very enriching opportunity to showcase my work and exchange knowledge with the scientific community engaged in this field.

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