HEP 2013
Stockholm
18-24 July 2013

Contribution ID: **21** Type: **Poster Presentation**

T symmetry invariance tests in neutral meson decays

The laws of quantum physics can be studied under
the mathematical T operation that inverts the direction of time.
Strong and electromagnetic forces are known to be invariant under temporal inversion, however the weak force is
not. The BaBar experiment recently exploited the quantum-correlated production
of neutral B mesons to show that T is a broken symmetry. Here
we show that it is possible to perform a wide
range of tests of quark flavour changing processes,
described by the weak interaction, under the T symmetry in order to
validate the Kobayashi-Maskawa mechanism and the Standard Model of particle physics.

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Track Classification: Flavour Physics and Fundamental Symmetries