Contribution ID: **641** Type: **Poster Presentation**

Direct constraints on the top-Higgs coupling from the 8 TeV LHC data

In order to directly constrain the top-Higgs coupling, the Higgs-top associated production is reanalyzed. Thanks to the strong destructive interference in the t-channel for standard model couplings, this process can be very sensitive to both the magnitude and the sign of a non-standard top-Higgs coupling. We project the sensitivity to anomalous couplings to the integrated luminosity of 50 fbˆ{-1}, corresponding to the data collected by the ATLAS and CMS experiments in 7 and 8 TeV collisions, as of 2012. We show that, by analyzing events from different combinations of the top and Higgs decay modes, it is possible to directly constrain a large portion of the negative top-Higgs coupling space presently allowed by the ATLAS and CMS global fits.

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Track Classification: Higgs and New Physics