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Measurement of Electron charge mis-identification rate for four top analysis

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The production of four top quarks is an extremely rare process which has not been observed yet. Also, its high sensitivity to the top Yukawa coupling and some beyond the standard model signatures make it a very interesting process to study. The decay channel where two of the top quarks decay into same sign leptons have a very low level of background contamination. One of the dominant backgrounds for this channel arises from the charge misidentification of the electrons. The mis-identification rate varies with the transverse momentum and the amount of detector material traversed by the electron. Hence a dedicated data driven approach is used to estimate this rate in two dimensional bins. In this talk, the method used for charge mis-identification rate extraction as well as estimation of the uncertainties will be presented.

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