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Type: **Experiment**

Search for Single Top Quark Production via Flavour Changing Neutral Currents in ATLAS data

In the Standard Model (SM) transitions between top quarks and other quark flavours mediated by neutral gauge bosons, so-called

Flavour Changing Neutral Currents (FCNC), are forbidden at tree level and highly suppressed at higher orders due to the Glashow-Iliopoulos-Maiani

(GIM) mechanism. However, there exist several new physics models, which significantly enhance rates of FCNC processes compared to the Standard Model predictions. Therefore any observation of such processes would be a strong indicator for new physics.

Data collected with the ATLAS detector are used and searched for FCNC events in which a light quark (u or c) interacts with a gluon to produce a single top quark, either with or without the associated production of another light quark or gluon. Candidate events of top quarks decaying leptonically are selected and classified into signal and

background like events using a neural network.

Author: FRIEDRICH, Conrad (Deutsches Elektronen-Synchrotron (DE))

Presenter: FRIEDRICH, Conrad (Deutsches Elektronen-Synchrotron (DE))

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