



Contribution ID: 134

Type: **not specified**

Single top quark production cross section at LHC in ATLAS

Measurements of the single top quark production cross sections in proton-proton collisions with the ATLAS detector at the Large Hadron Collider are presented.

Measurements of single top-quark production in the t and Wt -channels are presented and determination of the CKM matrix element $|V_{tb}|$ is discussed. We also discuss the separate measurement of the top and antitop quark and the ratio. These measurements are sensitive to the parton distribution function in the proton.

In addition, the s -channel production is explored and limits on exotic production in single top quark processes are discussed. This also includes the search for flavor changing neutral currents and the search for additional W 'bosons in the channel.

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