

Report

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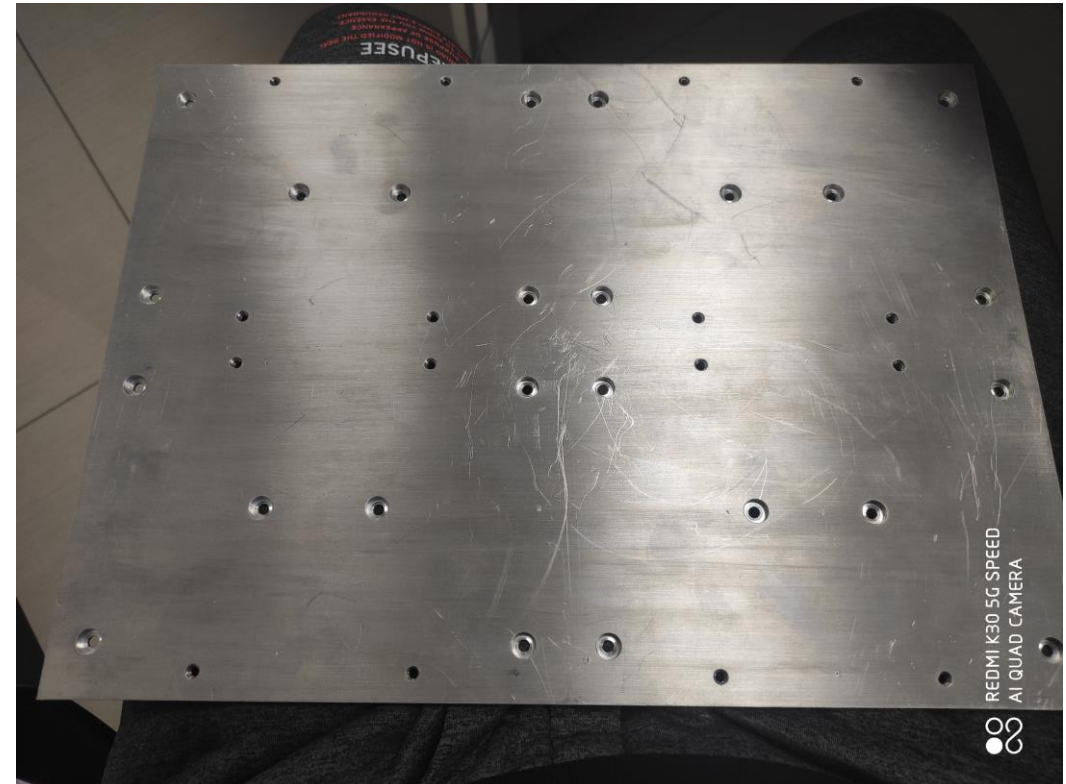
February 8, 2021

About qualification task

- We need to increase the production of modules
- The main problem is that once we finish making a module, we need a long time to set the parameters of the new module.
- One possible solution is that making more modules one time.
- Considering the size of the machine, we choose to make 4 modules one time.

About qualification task

- The first step is to redesign the base of the machine
- Redesign this to put 4 modules and make sure the size is small enough to put in the machine



About qualification task

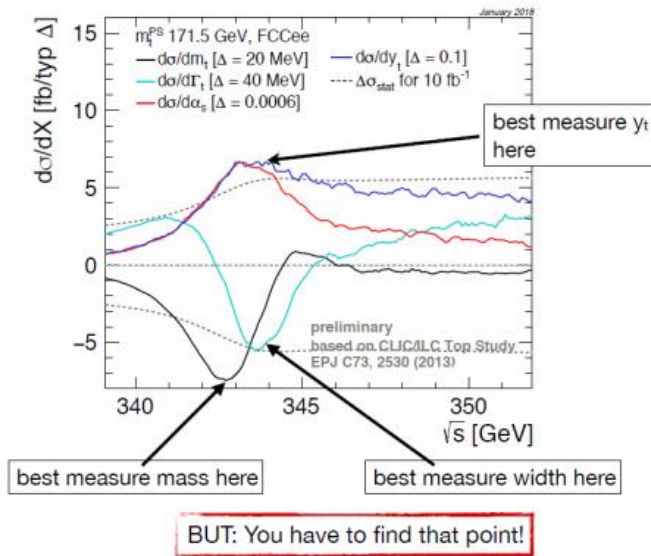
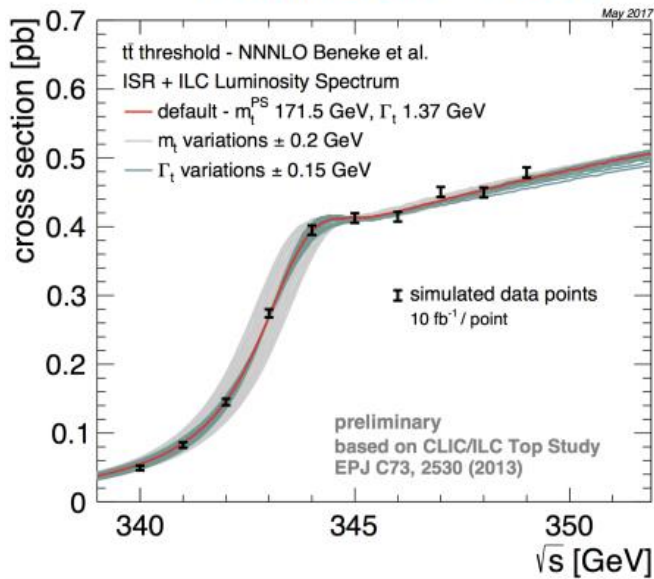
- After the first step we need to make some change on the machine and reprogramme.

About top mass

Top threshold scan

- Strategy:

- Need a rough scan in step of 1 GeV to measure the top mass (5 fb^{-1})
- Fix the final scan points
- since there are four parameters to fix, need at least 4 scan points
 - Scanning range 342 GeV ~ 350 GeV
 - Focusing 342 GeV ~ 345 GeV



t-QUARK MASS

t-Quark Mass (Direct Measurements)

$172.76 \pm 0.30 \text{ GeV}$ (S = 1.2)

t-Quark Mass from Cross-Section Measurements

$162.5^{+2.1}_{-1.5} \text{ GeV}$

t-Quark Pole Mass from Cross-Section Measurements

$172.4 \pm 0.7 \text{ GeV}$

$m_t - m_{\bar{t}}$

$-0.16 \pm 0.19 \text{ GeV}$

t-quark DECAY WIDTH

$1.42^{+0.19}_{-0.15} \text{ GeV}$ (S = 1.4)