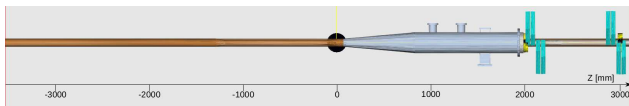# BGV Full MC Simulation
- First estimate of the L0 trigger performance

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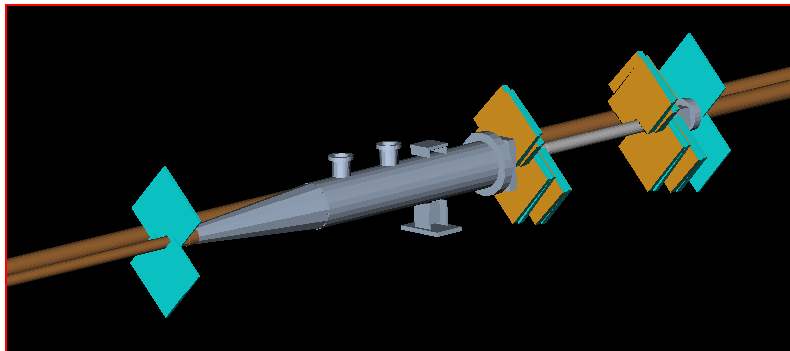
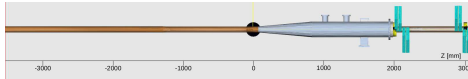# Parameters

22000 events of interaction between protons at $7\,TeV$ and static neon have been simulated between $z = -13m$ and $z = 3m$.

Only events with $z > 0m$ have been used for the trigger analysis

Visualisation

Efficiency

Veto position : $-100mm$

Hits from events at $z > 0$ due to back-scattering.
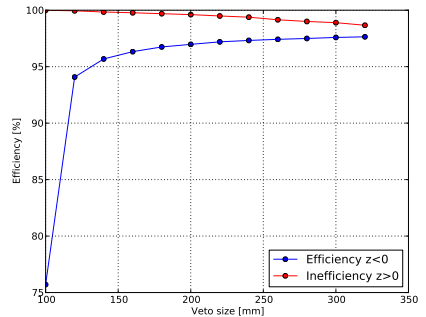

Figure: *Veto efficiency for different sizes.*
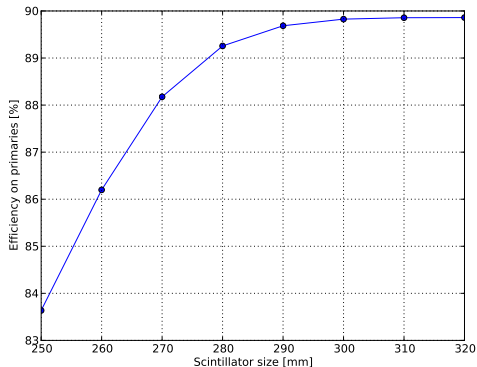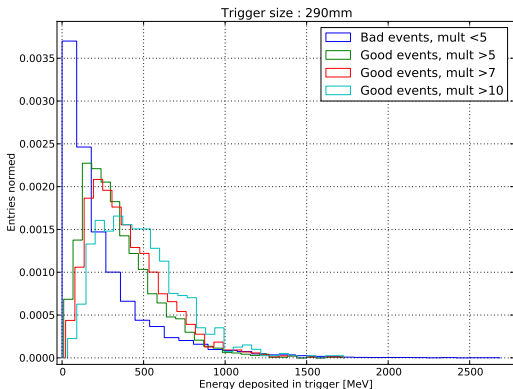
Acceptance

Figure: *Percent of primaries crossing both station and the trigger.*
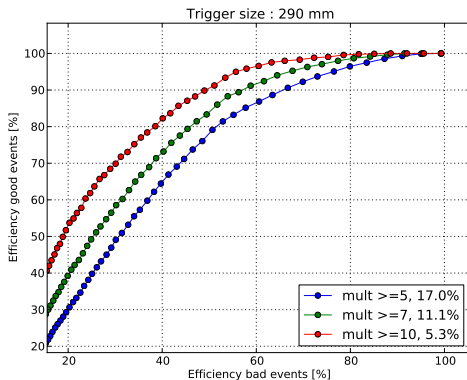
Saturation at 90%

Energy deposited in Trigger

Good events : minimum multiplicity of 5,7,10 in both stations.
Overlap between good events and bad ones.

Threshold scan

Trigger size : 290 mm

20% − 30% of bad events could be rejected without loosing more than 5% of good ones.

Rate converstion

Total rate without trigger and veto : $\sim 900kHz$

Rate with only the veto : $\sim 600kHz$

Rate with the veto and a trigger threshold : $\sim 500kHz$

Rate of good events :

1. multiplicity ≥ 5 : $\sim 85kHz$
2. multiplicity ≥ 7 : $\sim 55kHz$
3. multiplicity ≥ 10 : $\sim 25kHz$