Status Report of Overall Trigger and Latching Efficiencies Study(2)
-- Comparison with MC Prediction --

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Test Configuration

Objective:
Measure and monitor local/overall “trigger/latching(hit)” efficiencies (including Si gap, insensitive area, alignment, etc.)

“Method 1”: without muon telescope
- Select muon-like events with TKR (keep bias as small as possible; use only 3 top layers and the bottommost one)
- Test intermediate layers
- Comparison with Gleam simulation (direction/position measured by TKR)

“Method 2”: with muon telescope
- Select muon-like events with muon telescope (plastic scintillators)
- Unbiased overall efficiency study
- Comparison with Gleam simulation (require muons to cross plastic scintillators)

Here we show the comparison with MC prediction for “Method 1”
Comparison with MC simulation(1)

- Run id: 135002153 (two tower data, 213k events)
- Select muon-like events that pass from top of Tower A to the bottom of Tower A
- Use EM of v4r060302p23 for MC simulation

Efficiencies (including gap and insensitive region) are well reproduced by simulation in ~1%.
Comparison with MC simulation(2)

- From the top of Tower A to the bottom of Tower A

Efficiencies (including gap and insensitive region) are well reproduced by simulation in ~1% except for the plane Y4 with many partially dead strips.
**Comparison with MC simulation (3)**

- From the top of Tower B to the bottom of Tower B

![](image1.png)

- Again, data are well reproduced by simulation in ~1%.
- Plane by plane efficiencies are well understood and predicted by MC.
Conclusion and Future Plane

• We have compared 2-tower data with MC prediction for muon-like events with measured position/direction.

• Good agreement in ~1% for each tower. Gleam reproduces data well including gap and insensitive regions.

• Now checking events which pass through 2 towers.

• We will study event coincidence with muon telescope in detail, including comparison with MC simulation.