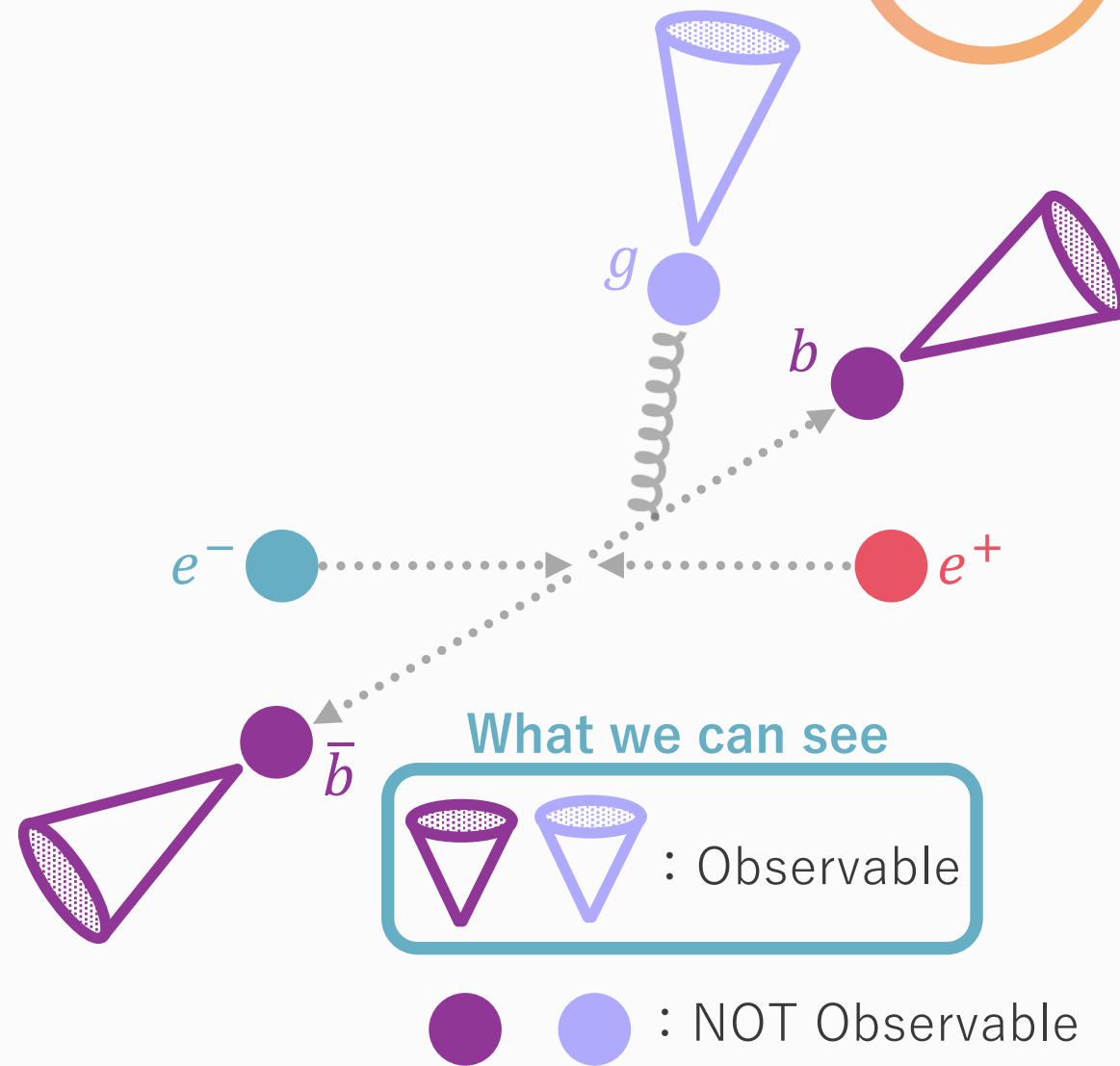


# Bottom mass study

1

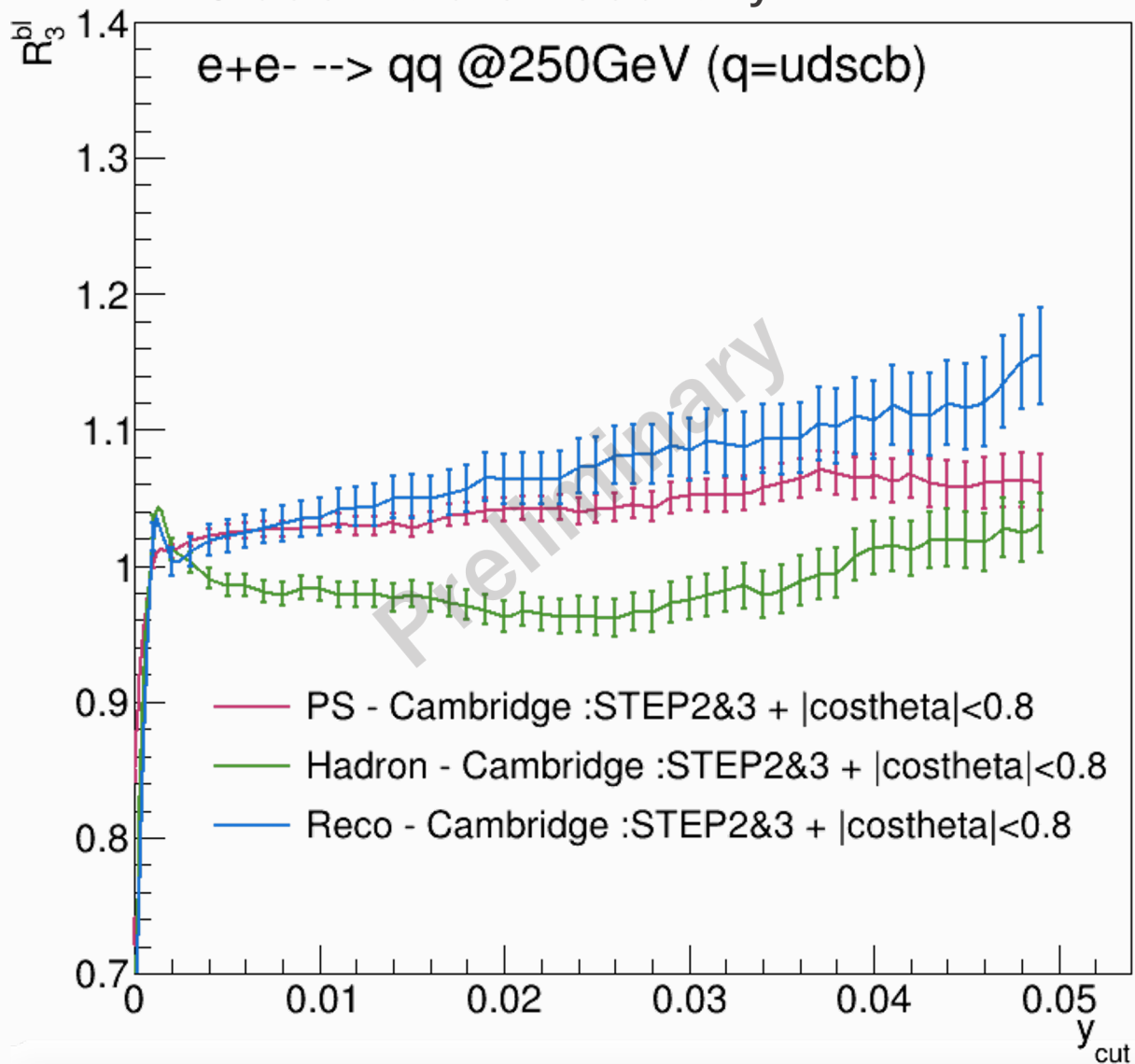
- ✓ Quark mass “run” because of renormalization effect.
- ✓ Bottom mass at higher-energy will be important input for new Physics.
- ✓ Focus process :  $e^+ e^- \rightarrow b\bar{b}g \rightarrow 3 \text{ Jets}$
- ✓ Gluon emission depends on bottom mass.  
→ **Decide bottom mass** indirectly from 3-jet process probability.



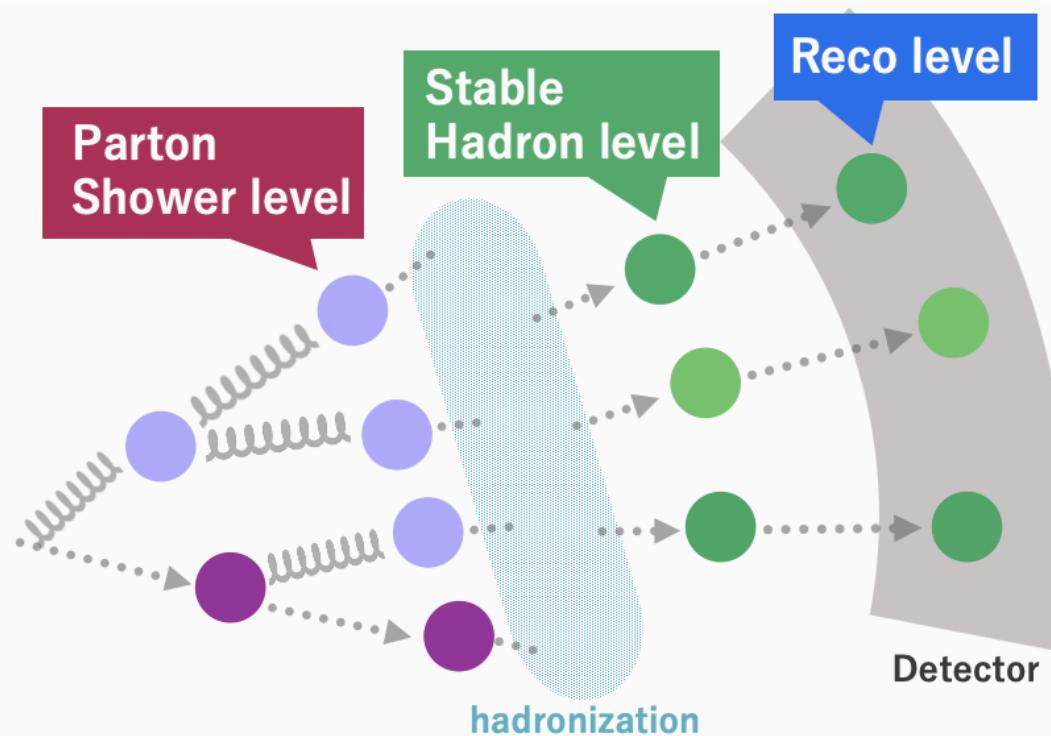
# Current status of study

2

## Observable result by Seidai Tairafune

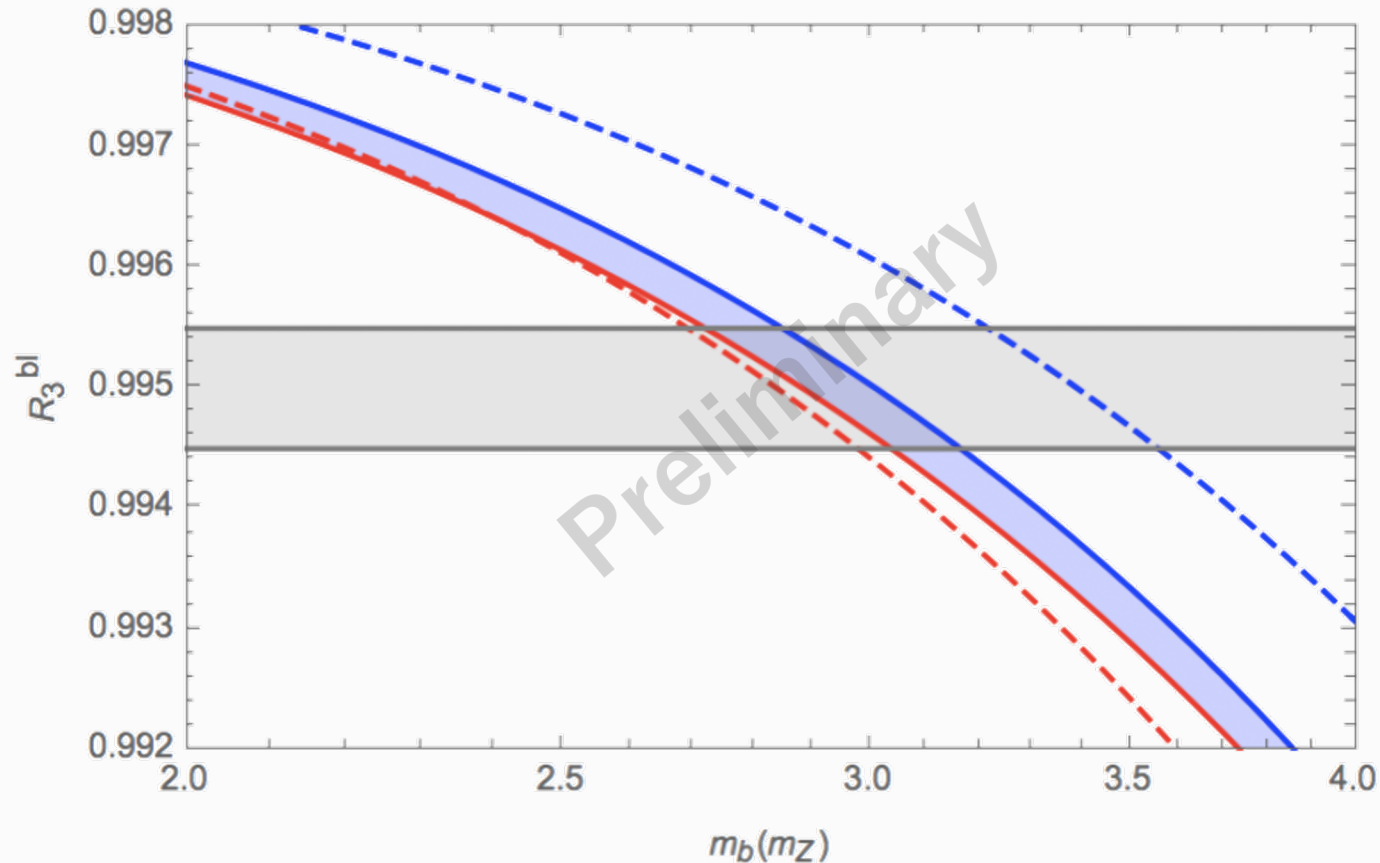


✓  $y_{cut}$  is the scale of reconstructed jet and observable  $R_3^{bl}$  depends on it.



## Calculation result by German Rodrigo

CAMBRIDGE – 250 GeV |  $y_{\text{cut}} = 0.008$



- ✓ Next task
  - Estimate systematic errors
  - Compare the result with calculation and extract bottom mass



- ✓ We had planned that directly study, but it couldn't be realized because of Corona virus.
- ✓ We're progressing analysis via remote meeting every week and aim to finish until October.
- ✓ GPPU School (Aug.31-Sep.3) → Attended
- ✓ GPPU seminar → 1time attended (1GASP)