Cluster charge profiles
&
Cluster charge reweighs

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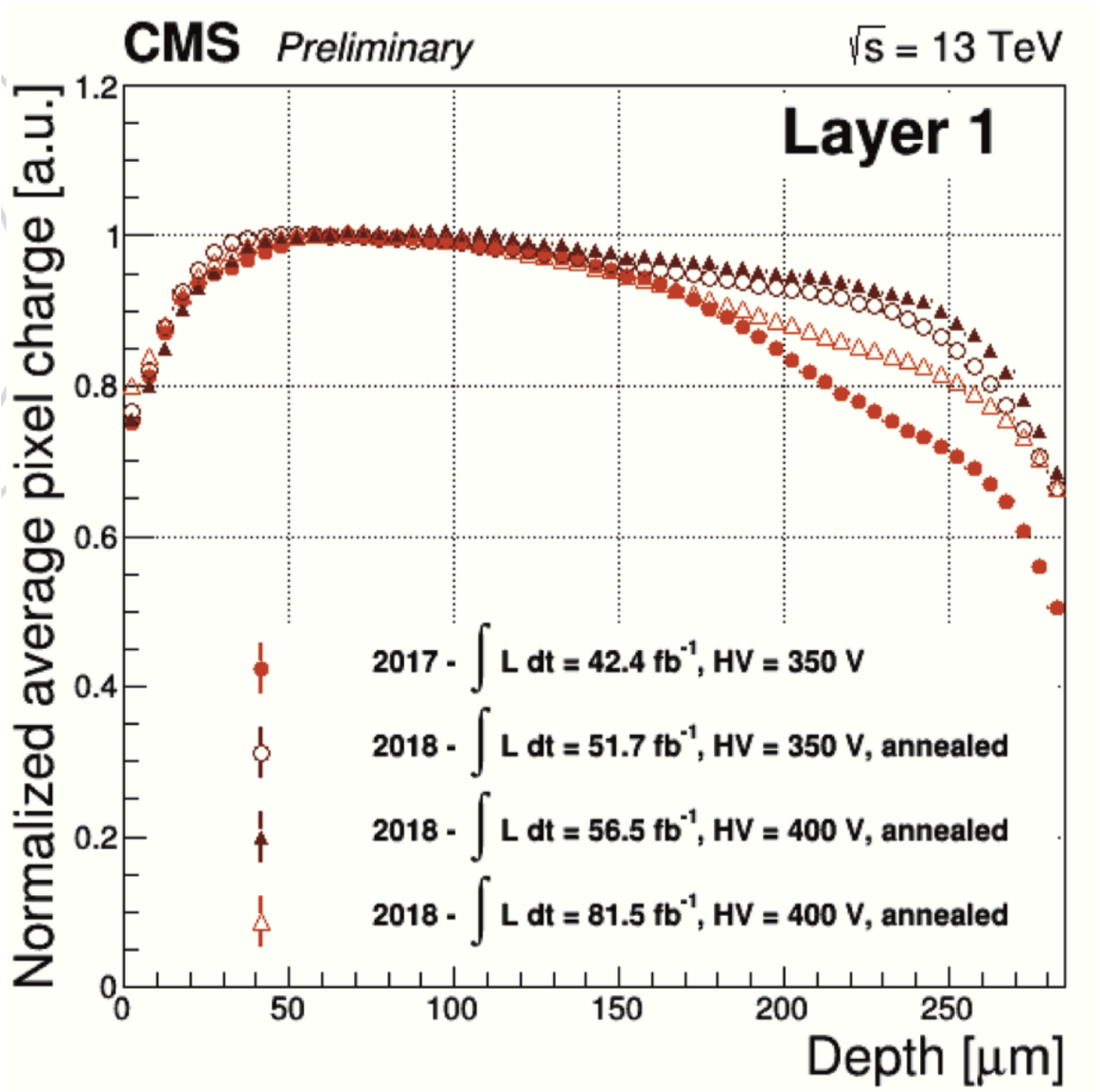
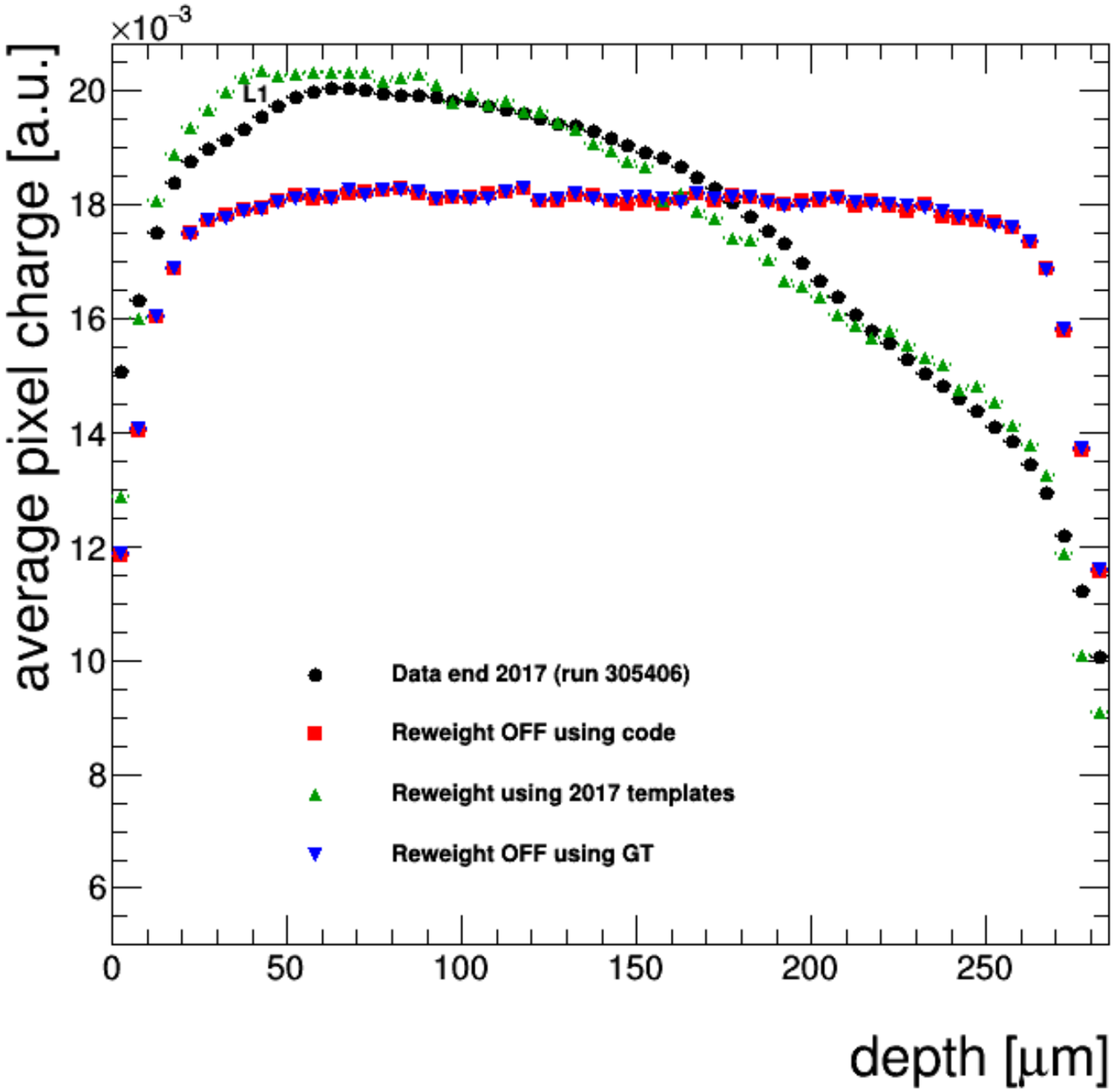
Cluster charge profile



Cluster charge as a function of sensor depth

- Without irradiation would be flat
- The higher the radiation damage the steeper the slope
- Used to monitor the detector condition

Cluster charge reweighting



We can also simulate it!

- Contribute to the test of the simulation reweight template
  - Producing samples with different scenarios
  - Comparison to data

Why do we need re-weight?

PIXELAV too slow to run directly in CMS simulation!

Default CMS charge deposition/collection is fast, but too idealized

Compromise: use the default charge deposition/collection, but re-weight using ratio of PIXELAV and average default simulation

➔ default CMS simulation fluctuates the charge collection properly
➔ radiation damage is taken into account
➔ it's fast

Simulation contact: follow meeting and report if something related to pixels is happening