HGTD- Test Beam Analysis

M.K.Ayoub

Overview

- Goal:

  - Study the performance time stability reference sensor LGA35

  - Used in all 2018 test beam campaigns

- Data used:

  - Oscilloscope data from April, June, September and October test beams

Some technicalities

- Copied the data to my eos storage space

  - Data produced by PyAna framework (thanks to Nikola)

  - /eos/atlas/user/m/mayoub/HGTD-TestBeam-Files

- For each test beam campaign

  - Merge all the runs with the same configuration into one batch

  - Reducing the number of runs (or root files) for simplicity

- Plotting and fitting

 - Using standalone scripts to get the variables, plot, fit,…

Comparison 2017-2018

- Compared the charge between September 2017 and April 2018

  - Using the same fit method explained previously

    - By cutting the noise peak at 0 and fitting the signal peak using a Gaussian convoluted with a Landau fit

T=20°/HV=180V	Charge (fC)
April (2018)	5.7 +- 0.07
September (2017)	5.9 +- 0.05

Jitter

- Compared a new variables between the different test beam campaigns

  - The jitter
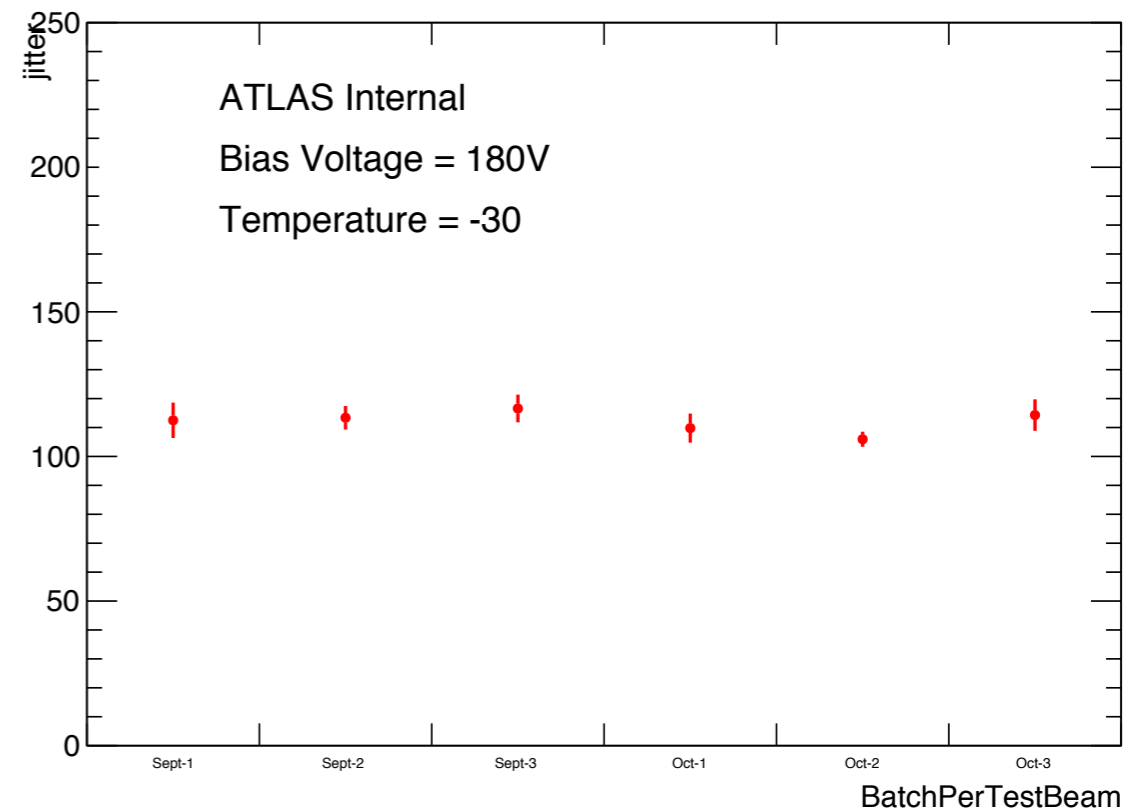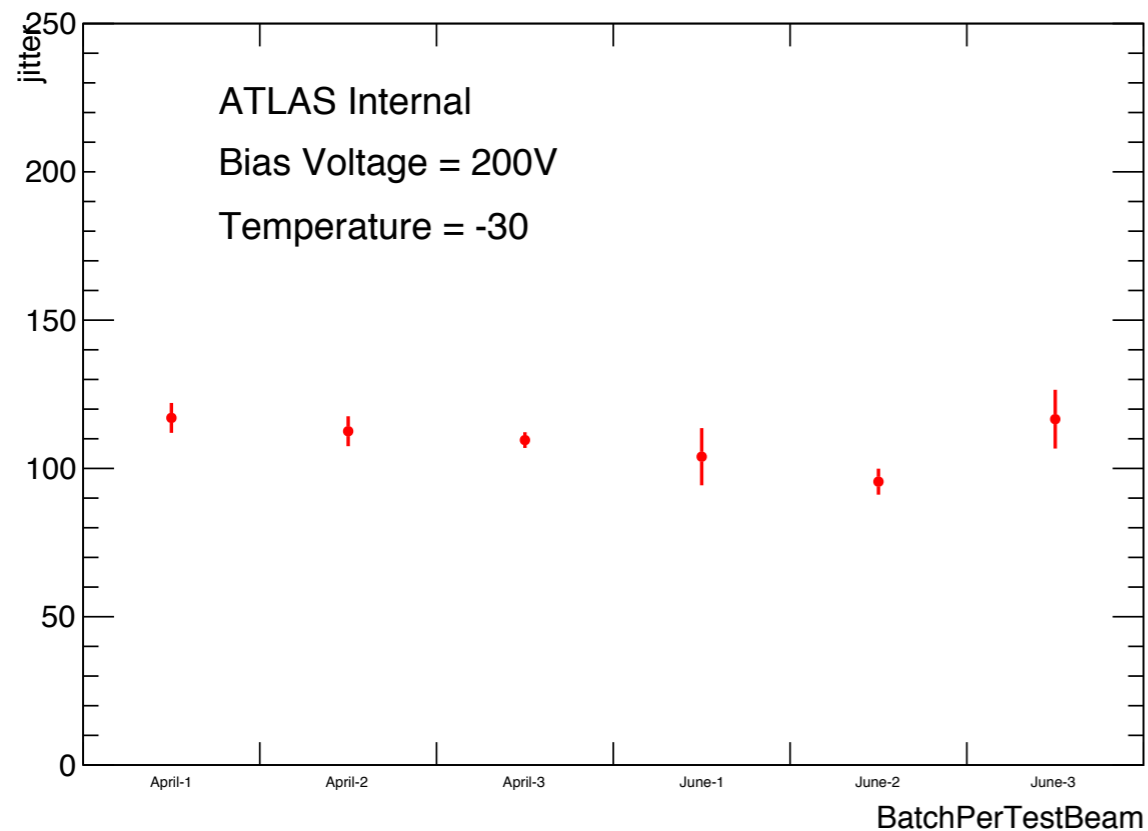
Outlook

- 2017 versus 2018 comparison showed compatible numbers

  - For charge variable

- Started looking at other variable

  - Jitter: Showing compatible results along the test beam campaigns

  - Will prepare other variables before the next Test Beam analysis meeting