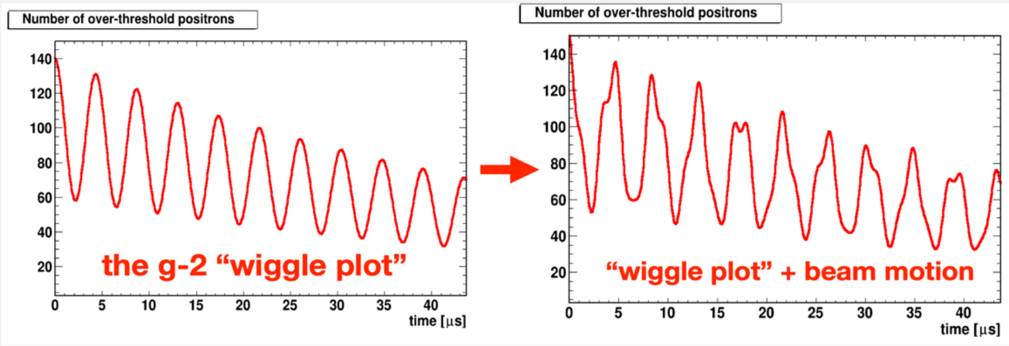
The coupling between betatron oscillation and detector acceptance



Major systematics source for ω_a

Systematic uncertainty	Run-2 (ppb)	Run-3a (ppb)	Run-3b (ppb)	Run-2/3 (ppb)
CBO handling	22	18	28	21
Pileup corrections	9	6	7	7
Gain corrections	5	4	5	5
Residual slow effect	5	14	10	10
Other systematics	2	5	3	4
Total	25	24	31	25

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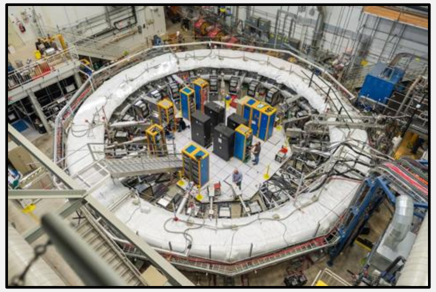
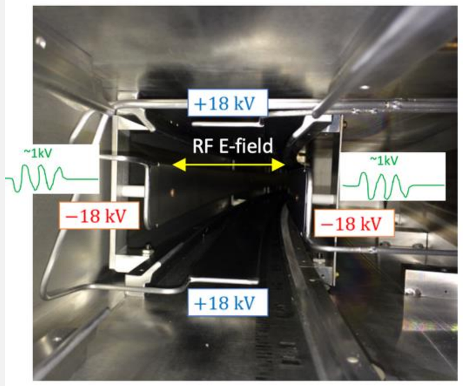
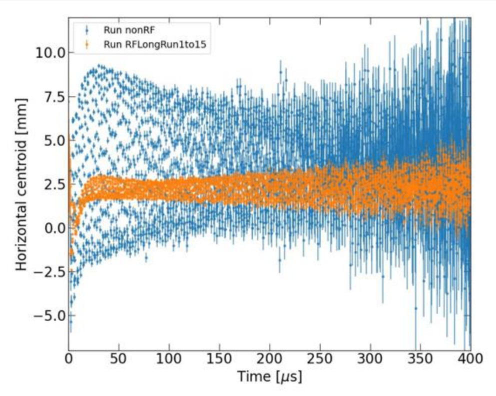


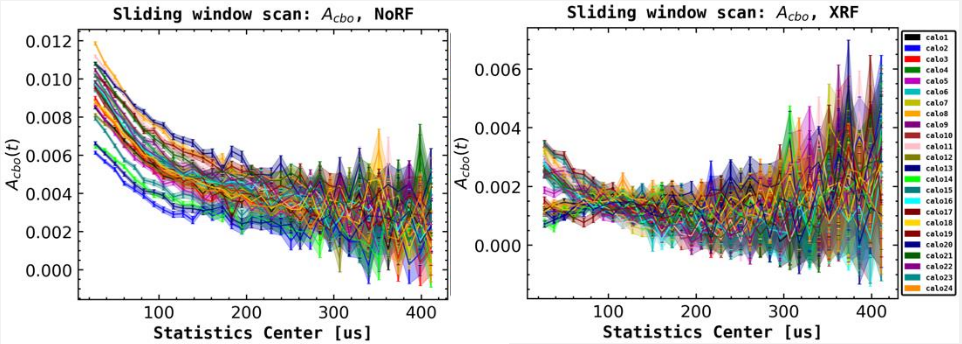
Electrostatic Quadrupole + RF

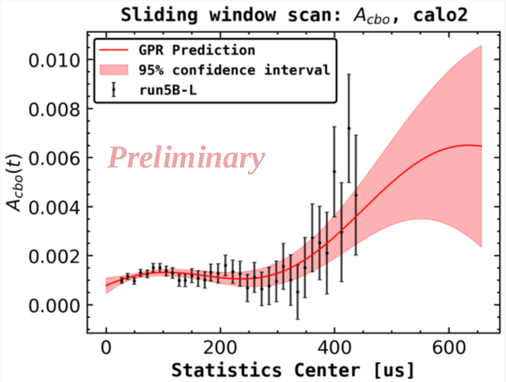


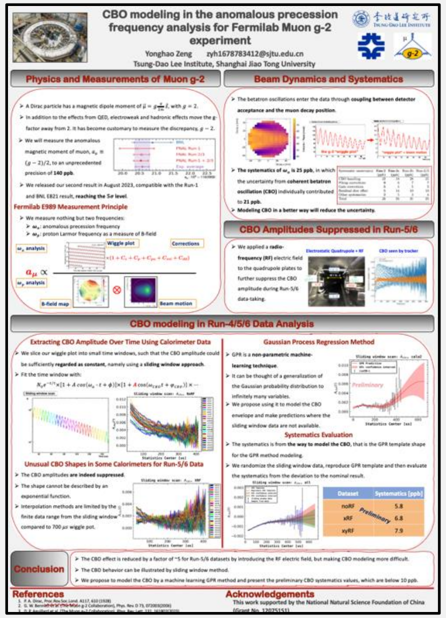
CBO seen by tracker



CBO modeling becomes more difficult







- This poster will be showing
  - Brief introduction of Fermilab Muon g-2 experiment
  - Beam dynamics effect in the anomalous precession frequency analysis
  - A machine-learning method, Gaussian Process Regression (GPR), to model CBO
  - Preliminary result for Run-4/5/6 data

Poster No. B04 < 1 >