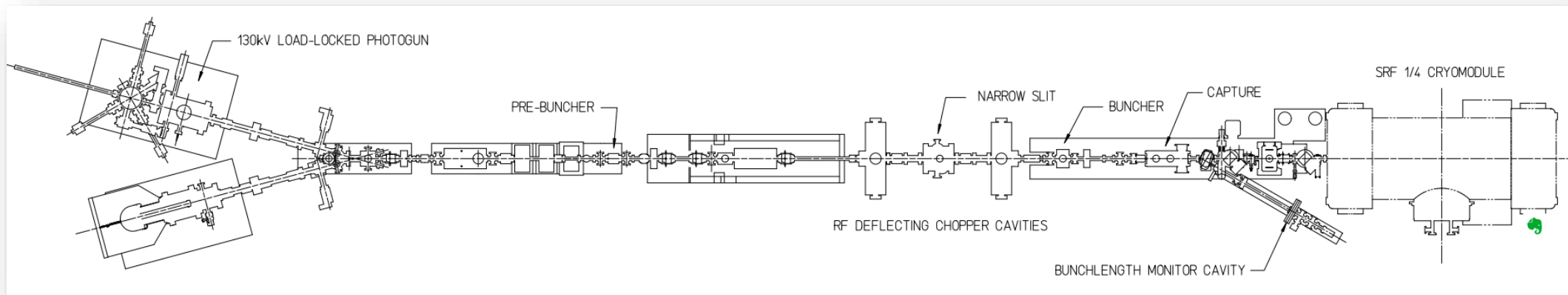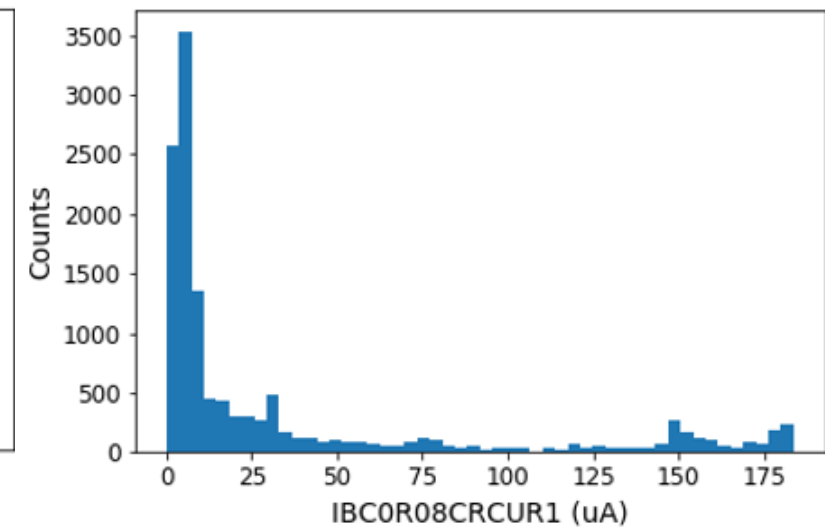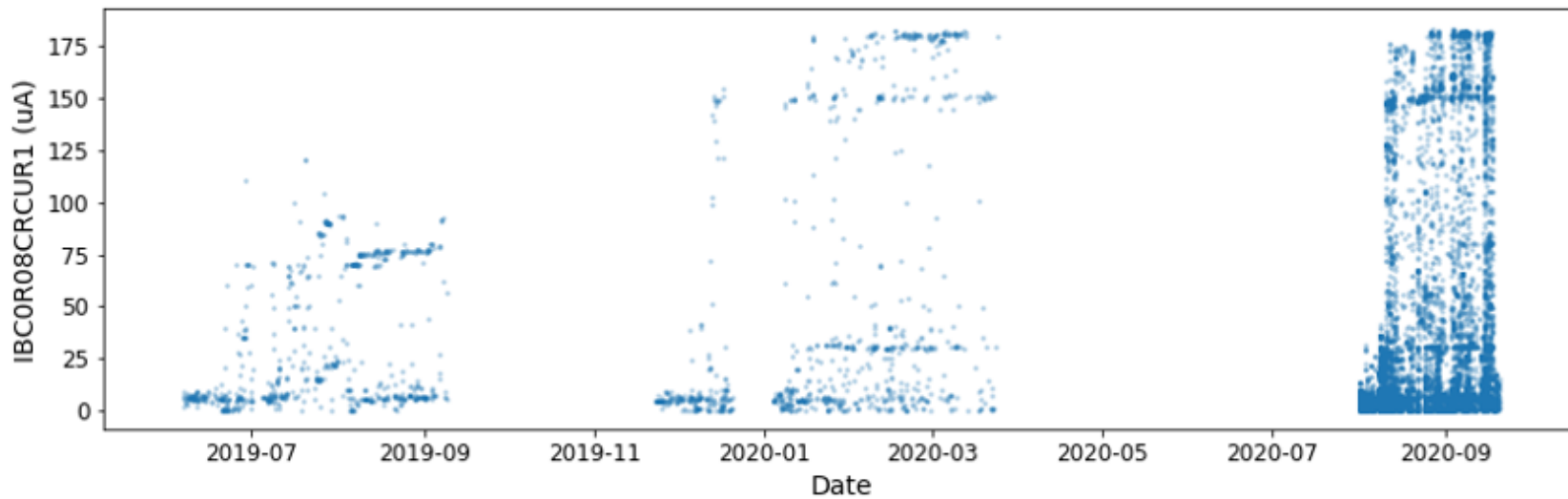# Smart Alarm for the CEBAF Injector

- ***Goal***: the ability to rapidly identify potential root causes of machine faults
  - ✓***Stretch Goal***: by monitoring machine drifts, identify areas that need attention ("tweaking") before the machine trips

- alarm systems are commonly used to indicate when specific machine parameters are drifting outside their normal tolerances

- however, operators are still required to interpret these alarms in the context of many interacting systems and subsystems and take corrective action
  - ✓i.e. beam trips on beam loss monitor (BLM), but why?

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Smart Alarm for the CEBAF Injector

- train an _inverse model_ on a large body of _good_ operational _data_
  - ✓ _inverse model_ → given the readings, predict the settings
  - ✓ _good_ → beam on, delivered to the end of the injector, and the current exceeds some user-defined threshold
  - ✓ _data_ → collected from operational archiver

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