Collimation during the ramp

APEX 1/15-1/16

A. Drees, G. Robert-Demolaize

Plan of the experiment

- Idea: bring the collimator jaws towards the beam after transition to scrape away the halo particles.

- How to: create a new sequence UpColl.tape in which jaws are brought in 120s after accramp; new collimators settings (shown in next 2 slides) are stored as Position #200. After experiment, reload the standard sequence and collimation settings.

- 2h experiment: try different set of positions depending on beam decay signal

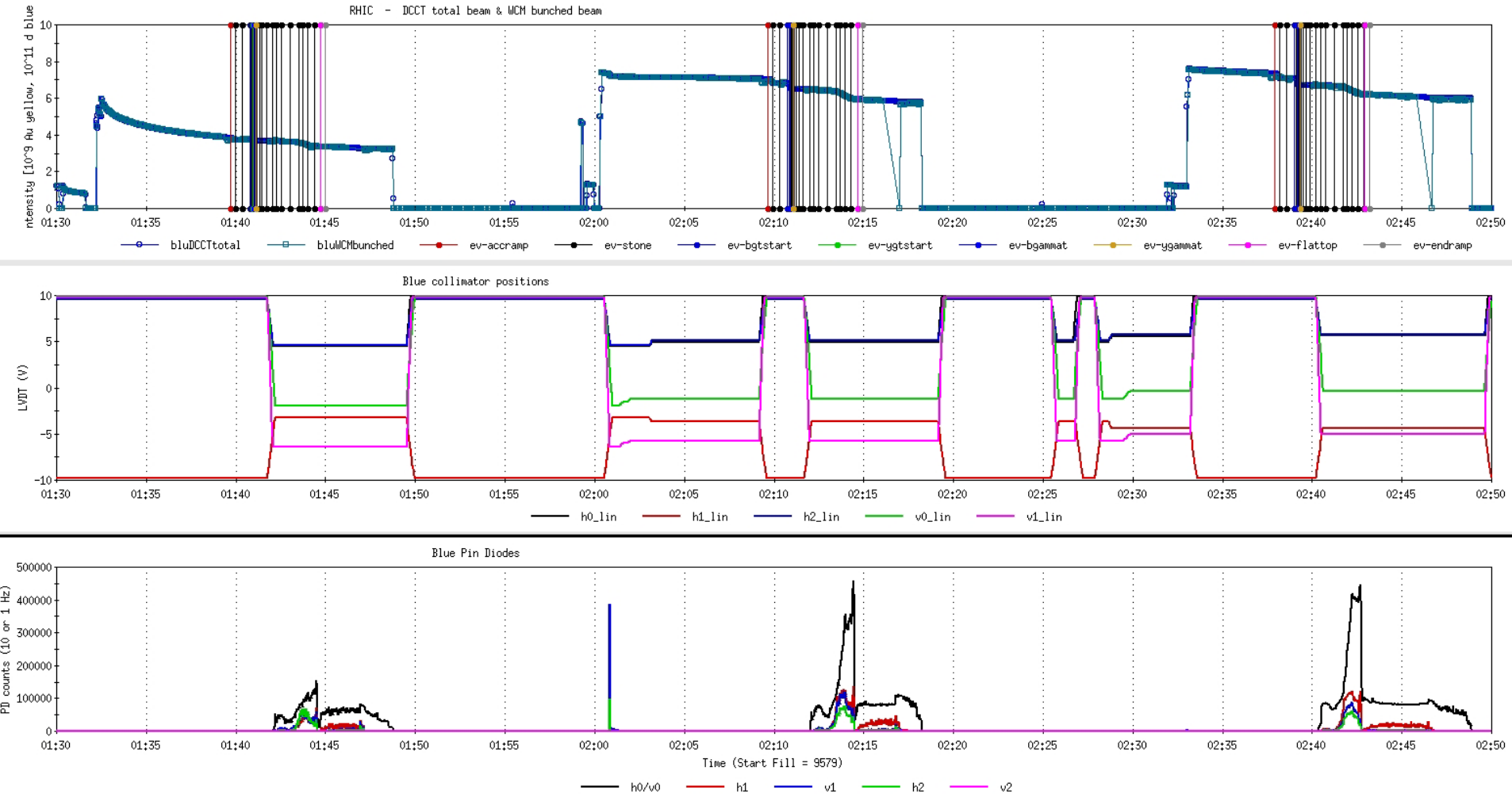
  - managed to work with 3 ramps; 1st one had a low Blue intensity.

  - different "GO" timing for the collimators for 3rd ramp, 135s after accramp.

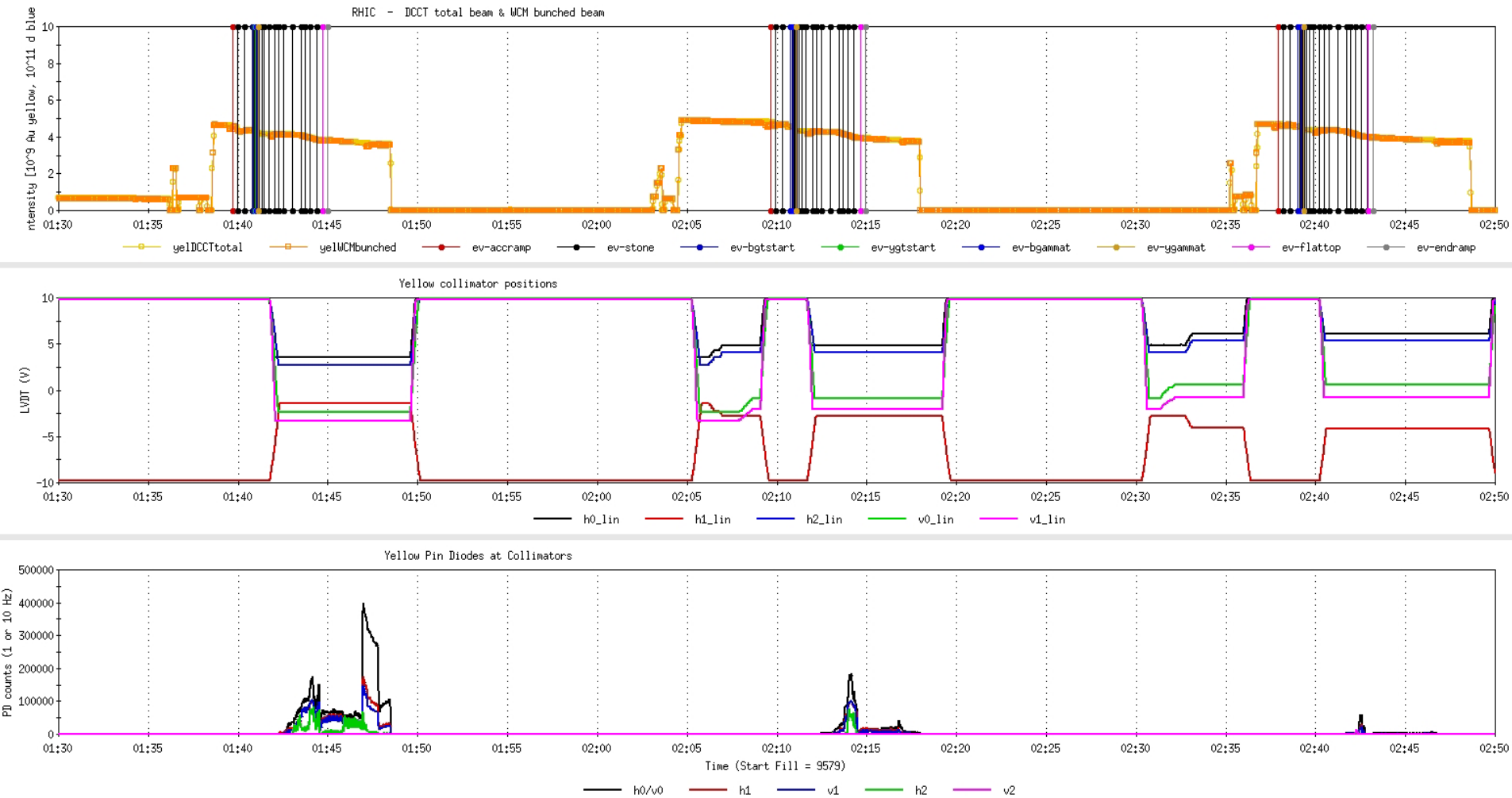
Collimation settings for the ramp – Blue

Collimation settings for the ramp – Yellow

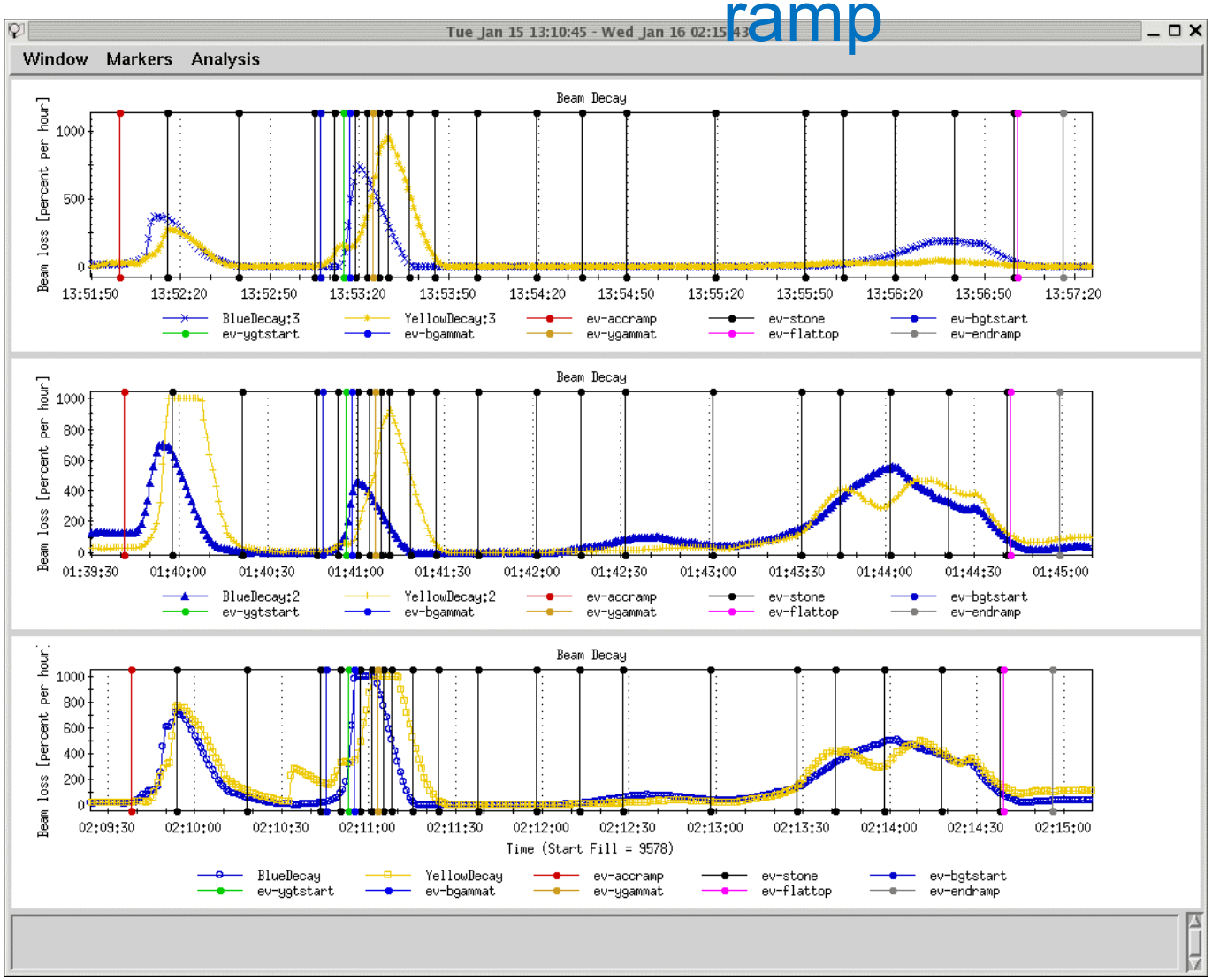
Overall look at the experiment – Blue beam



Overall look at the experiment – Blue beam



Comparing beam decay signals with nominal ramp

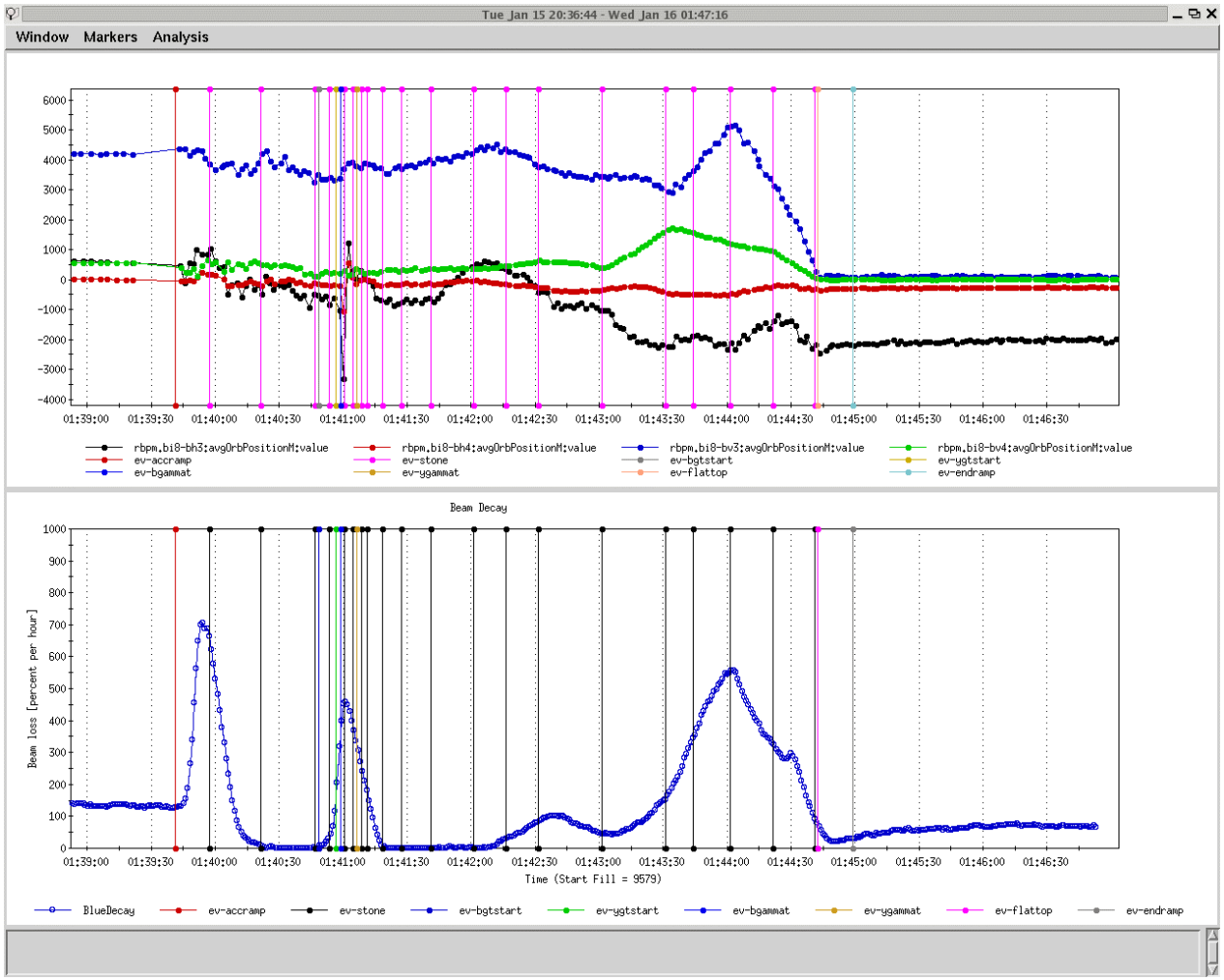


last physics ramp

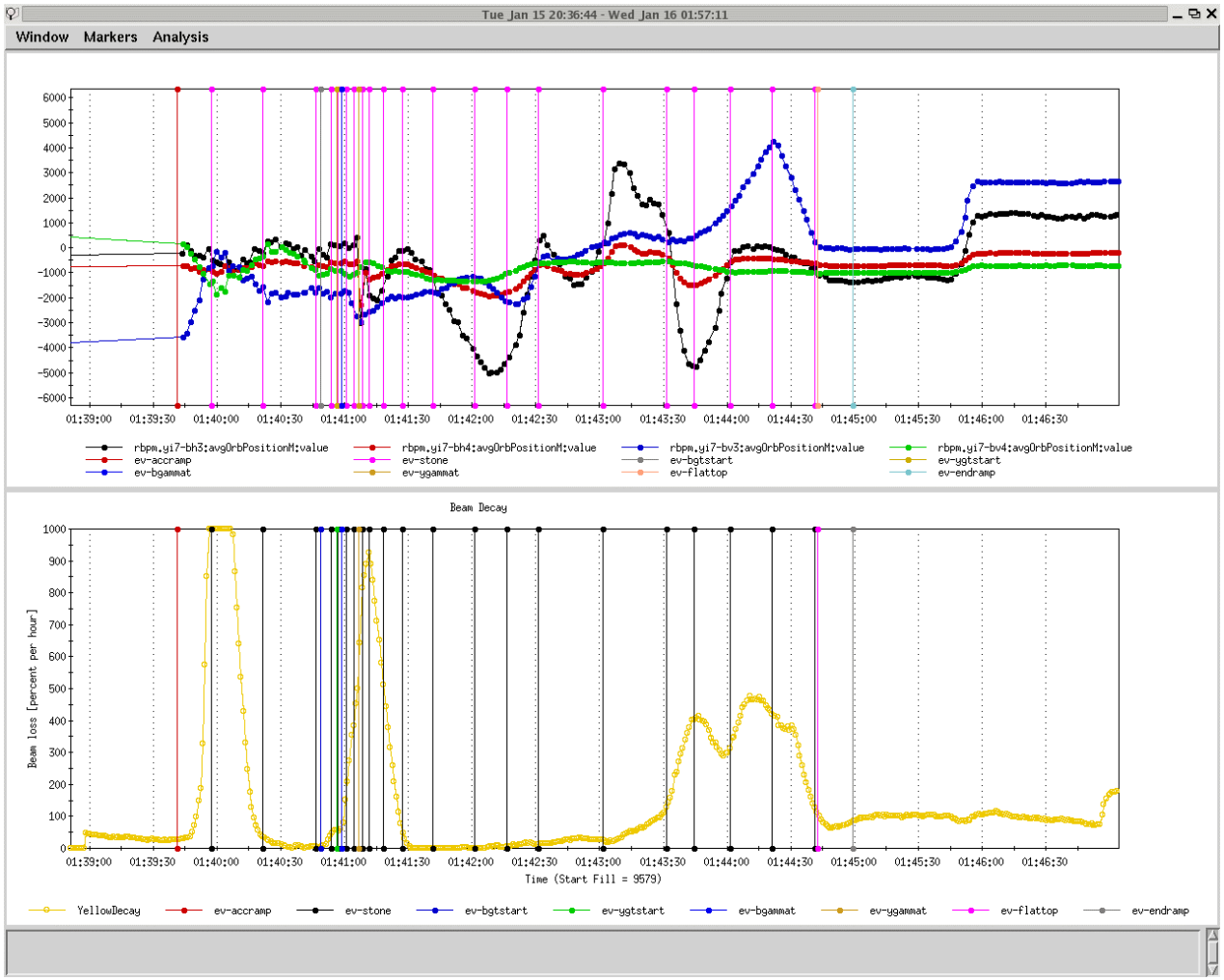
1st APEX ramp

2nd APEX ramp

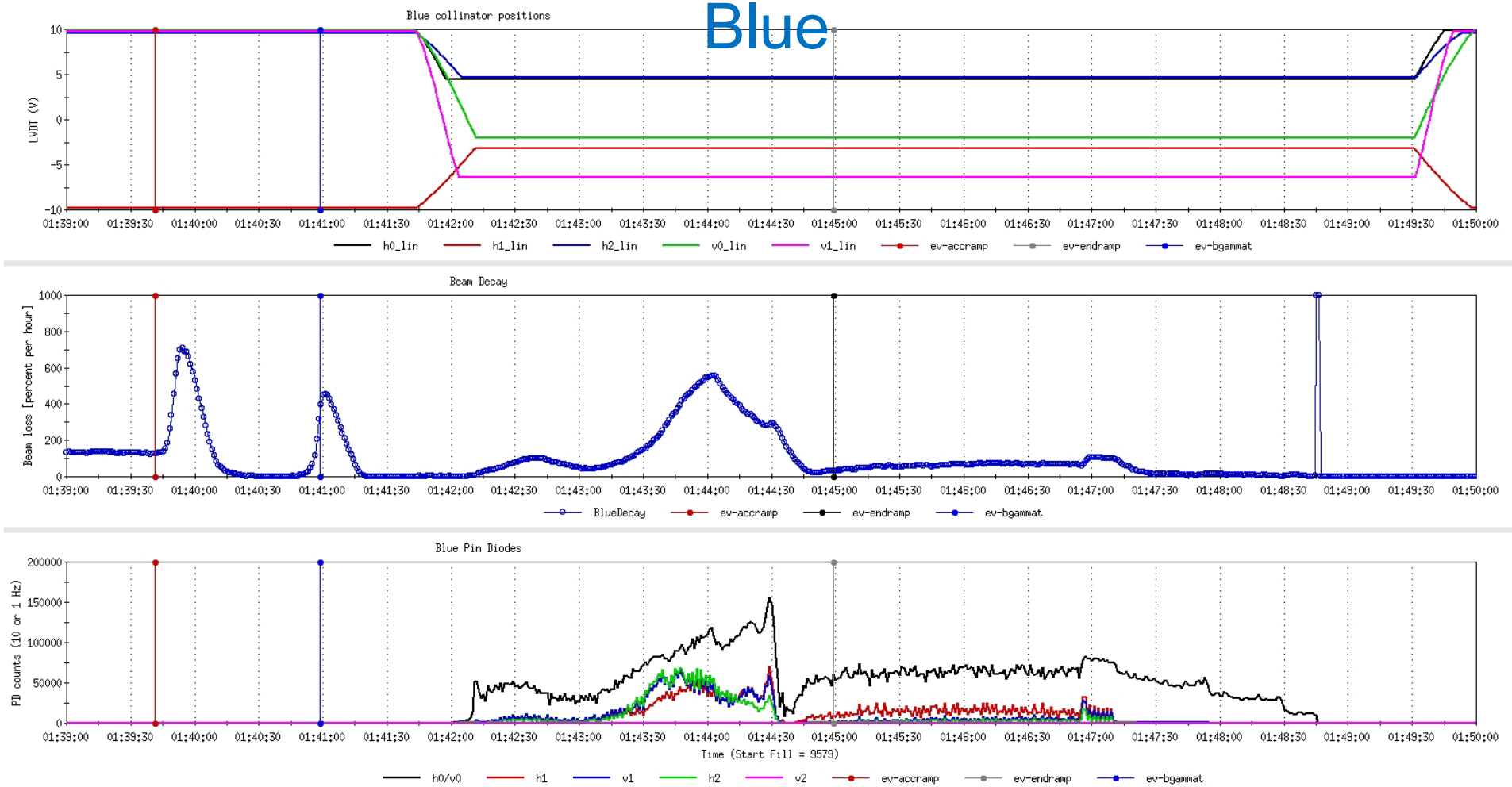
Beam decay vs. orbit position - Blue



Beam decay vs. orbit position - Yellow

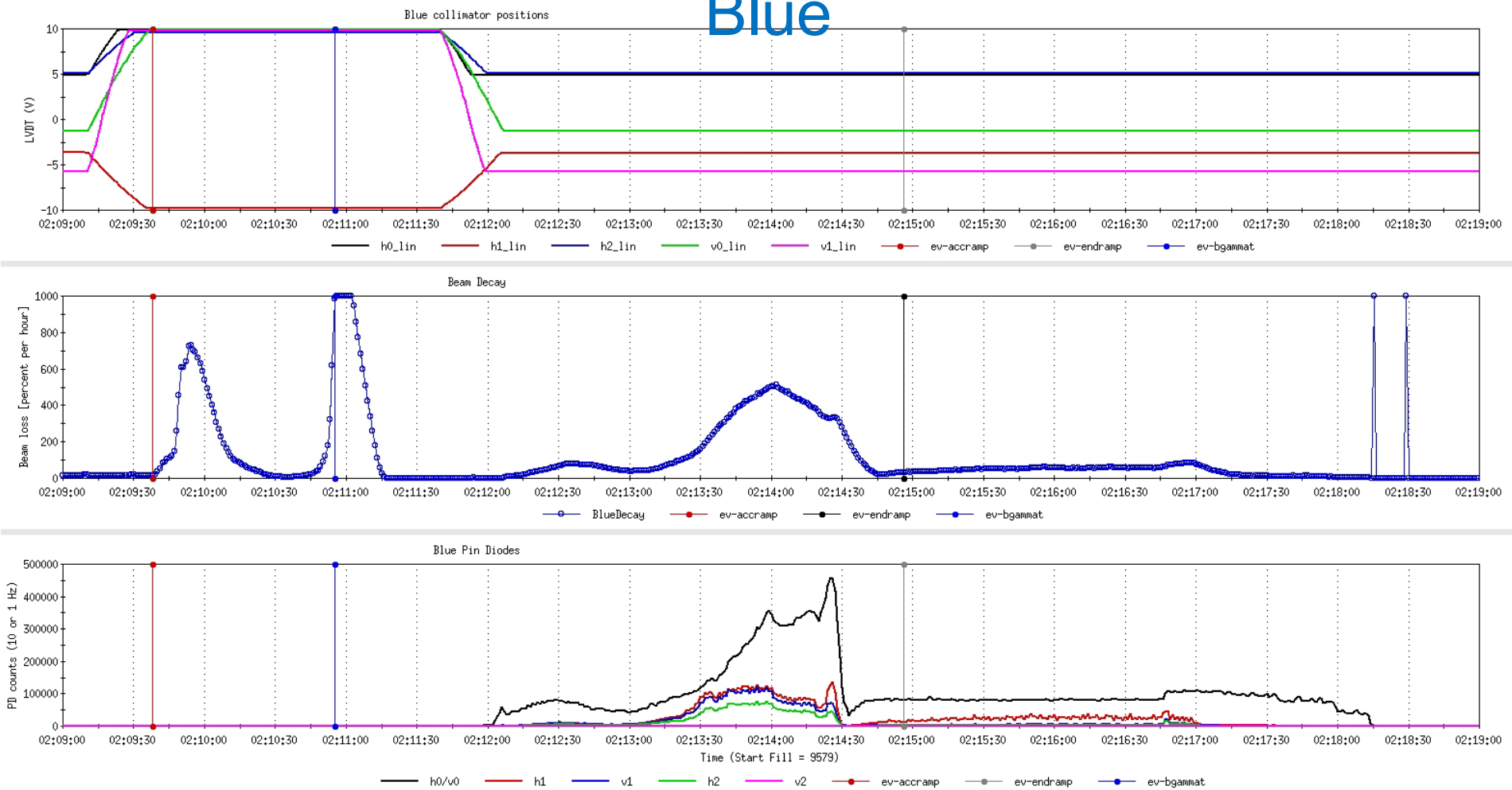


Beam decay and Pin diodes vs. jaw opening - Blue



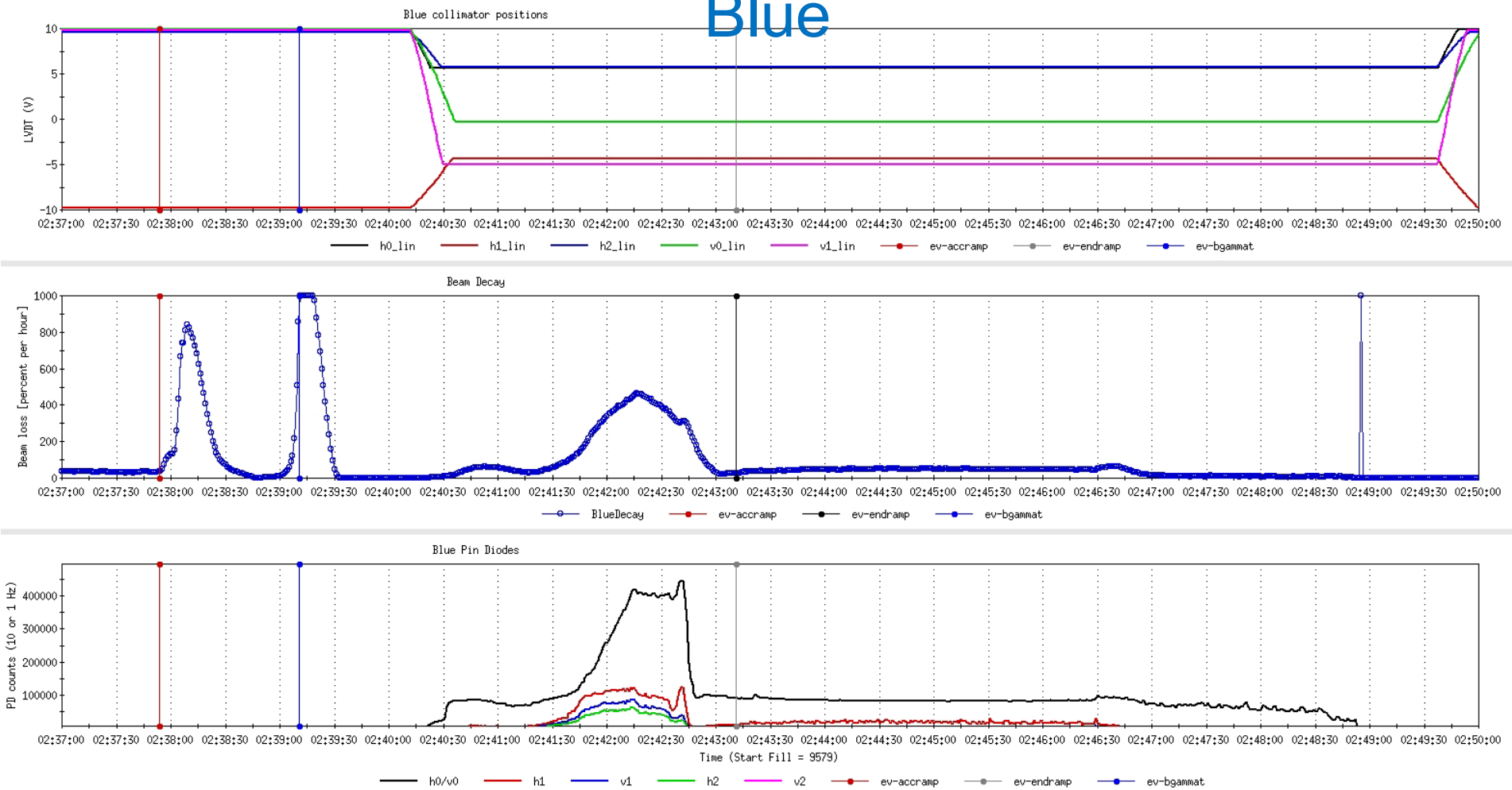
1st store

Beam decay and Pin diodes vs. jaw opening - Blue



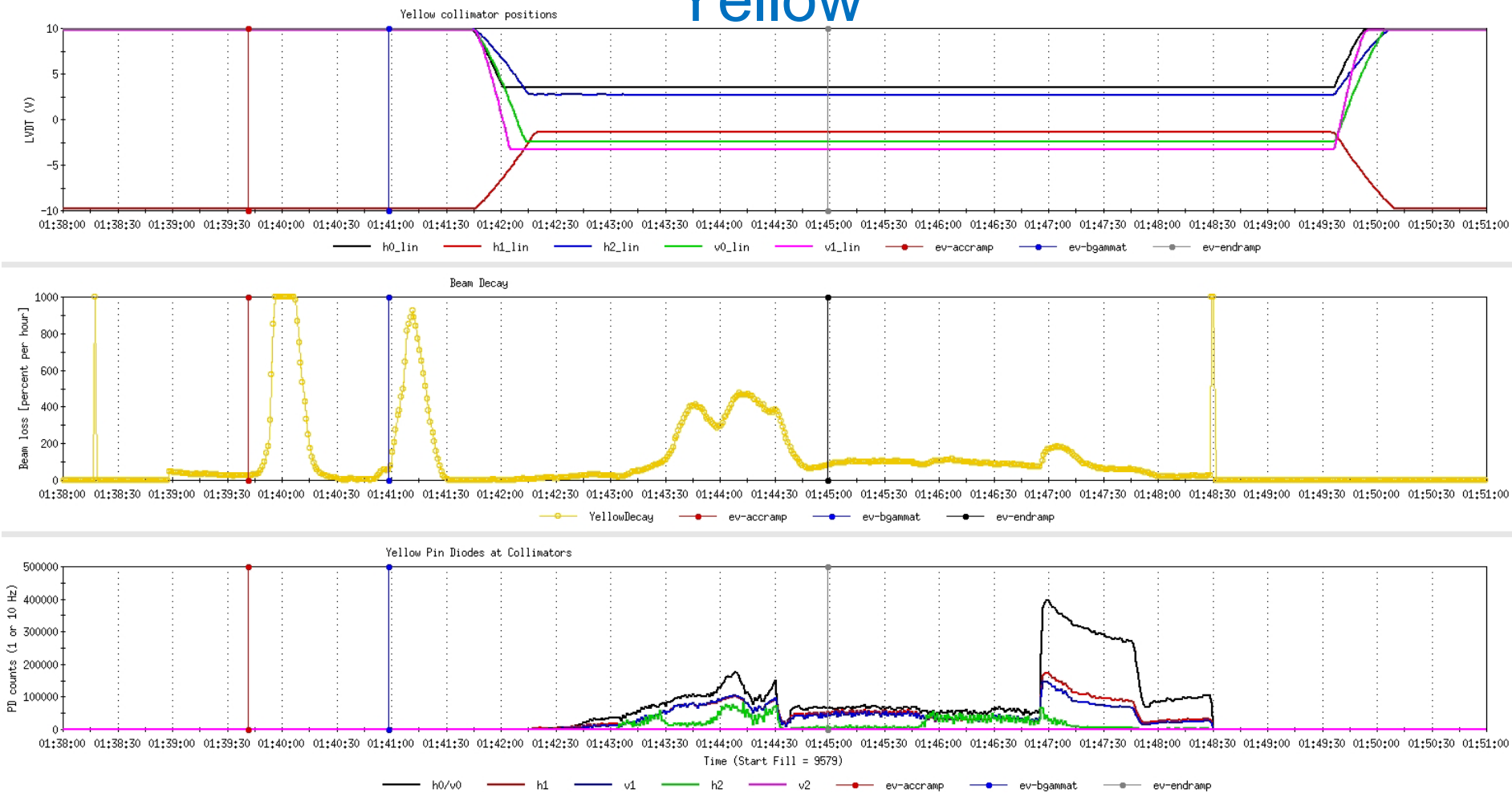
2nd store

Beam decay and Pin diodes vs. jaw opening - Blue



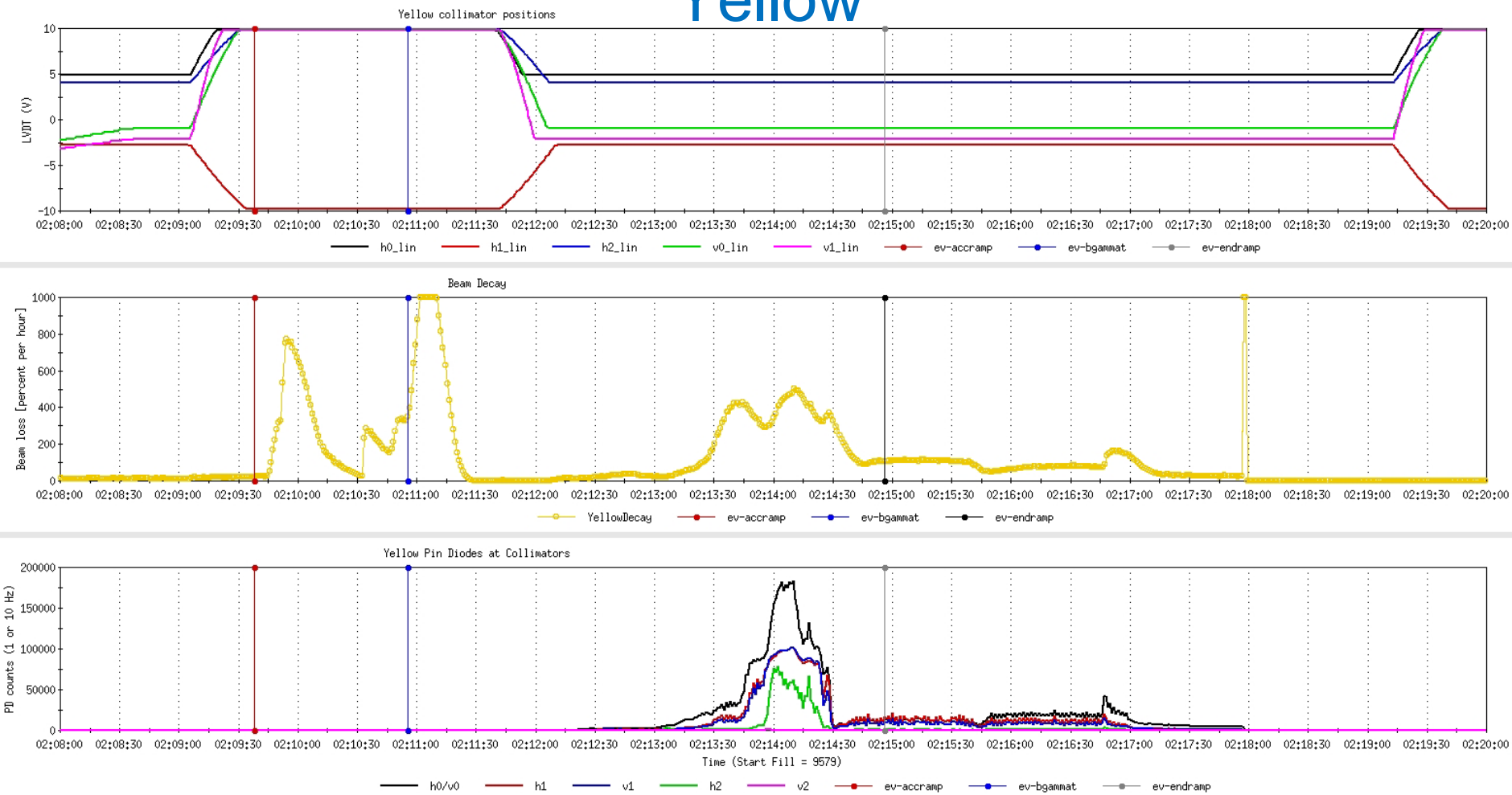
3rd store

Beam decay and Pin diodes vs. jaw opening - Yellow



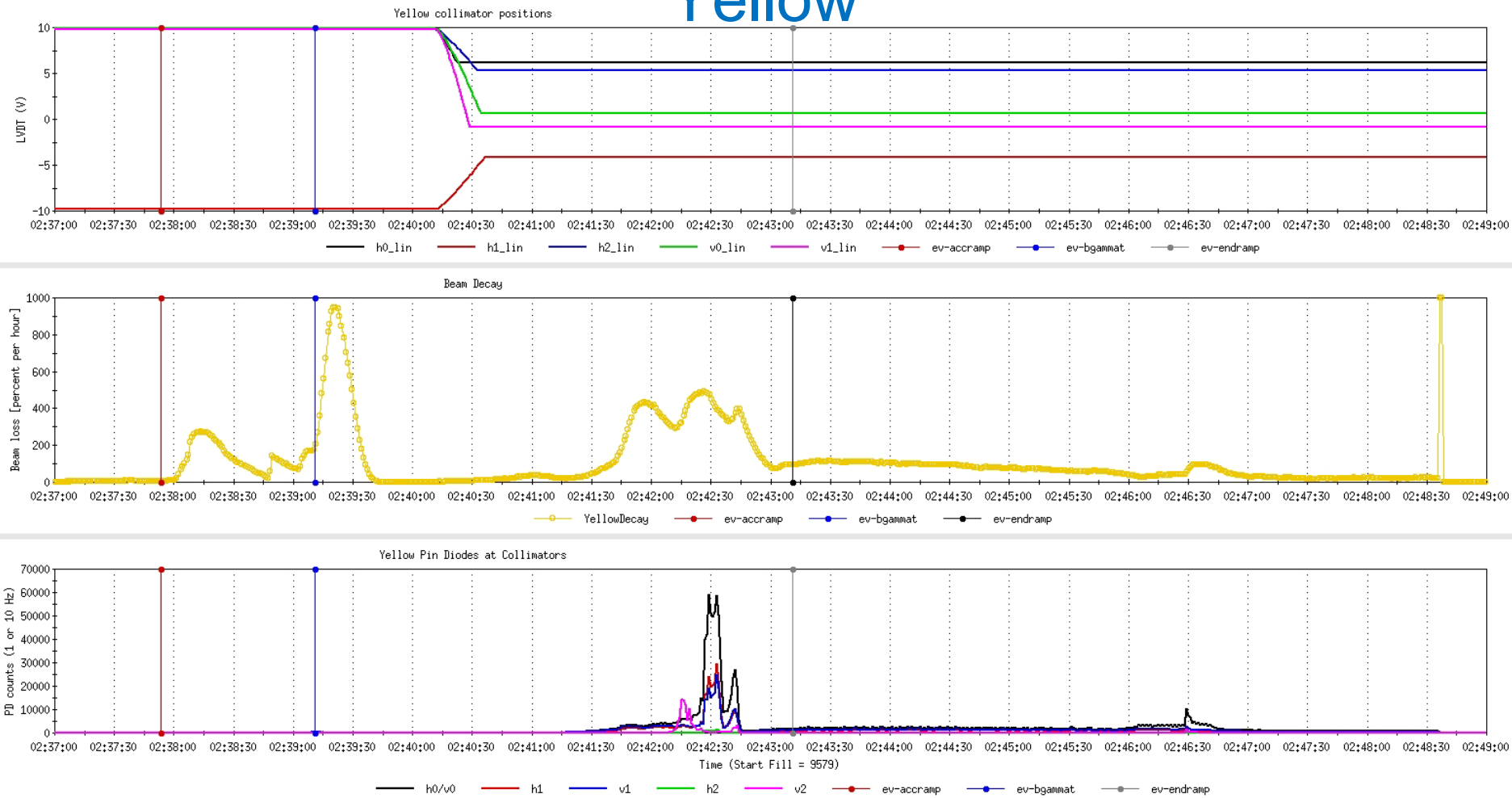
1st store

Beam decay and Pin diodes vs. jaw opening - Yellow

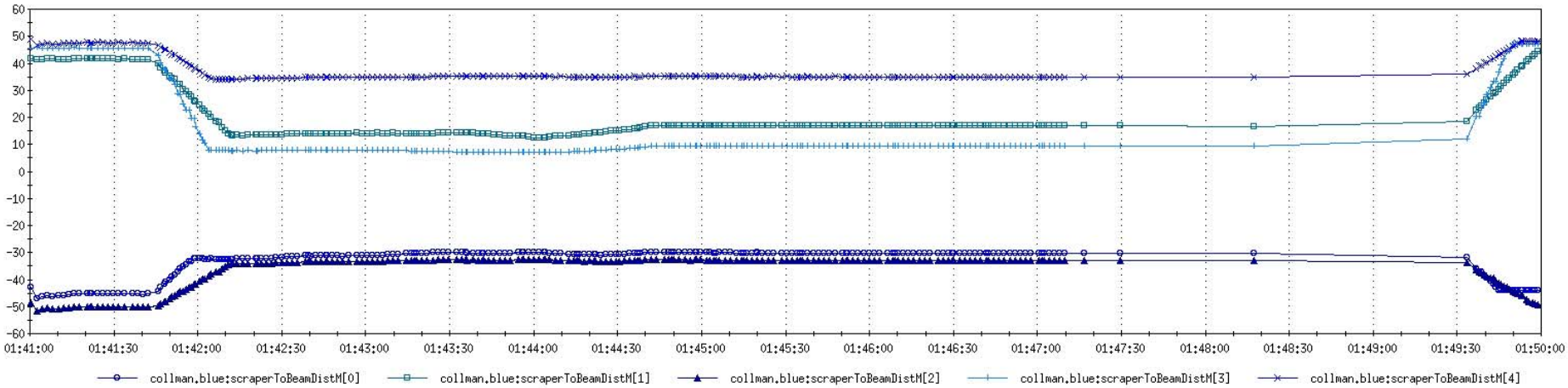


2nd store

Beam decay and Pin diodes vs. jaw opening - Yellow



3rd store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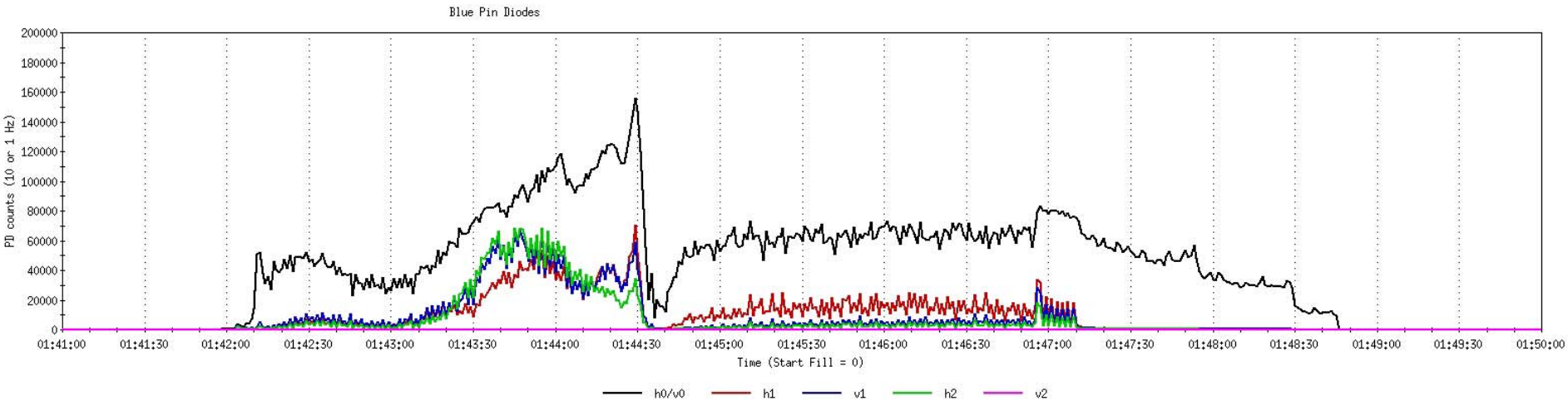
Blue Pin Diodes
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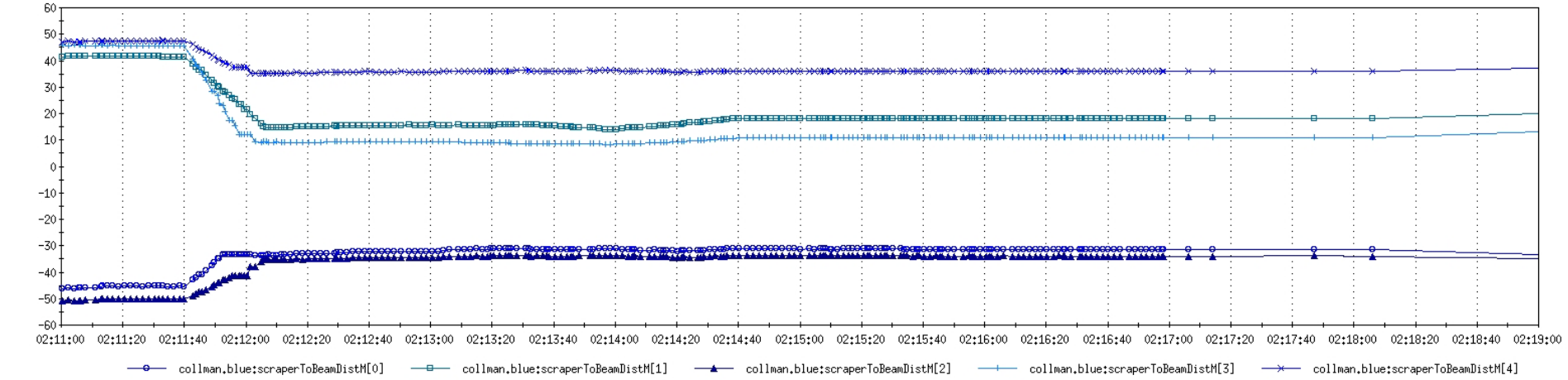
h0/v0
h1
v1
h2
v2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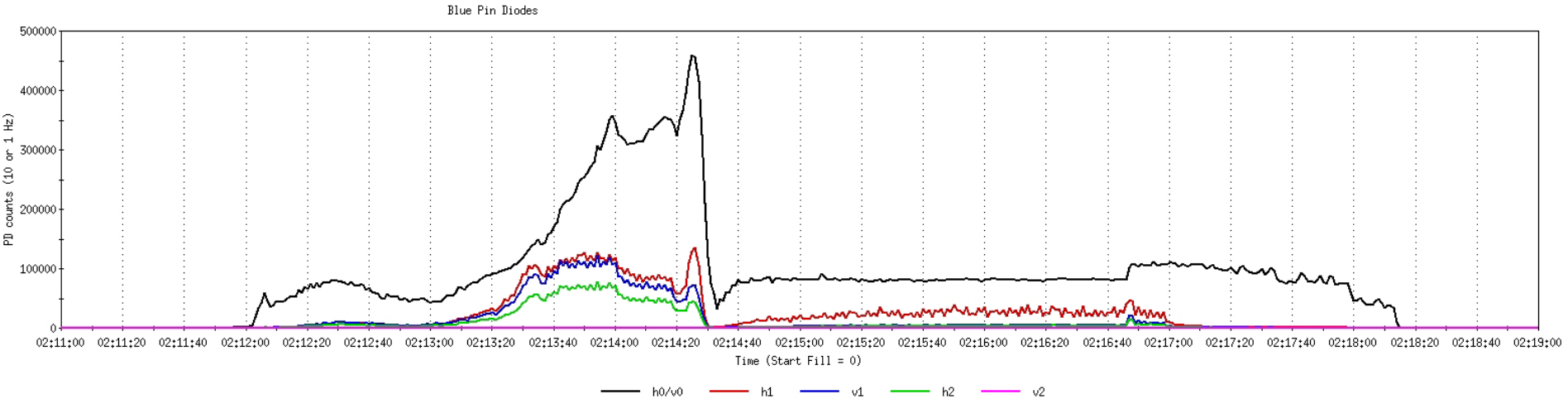
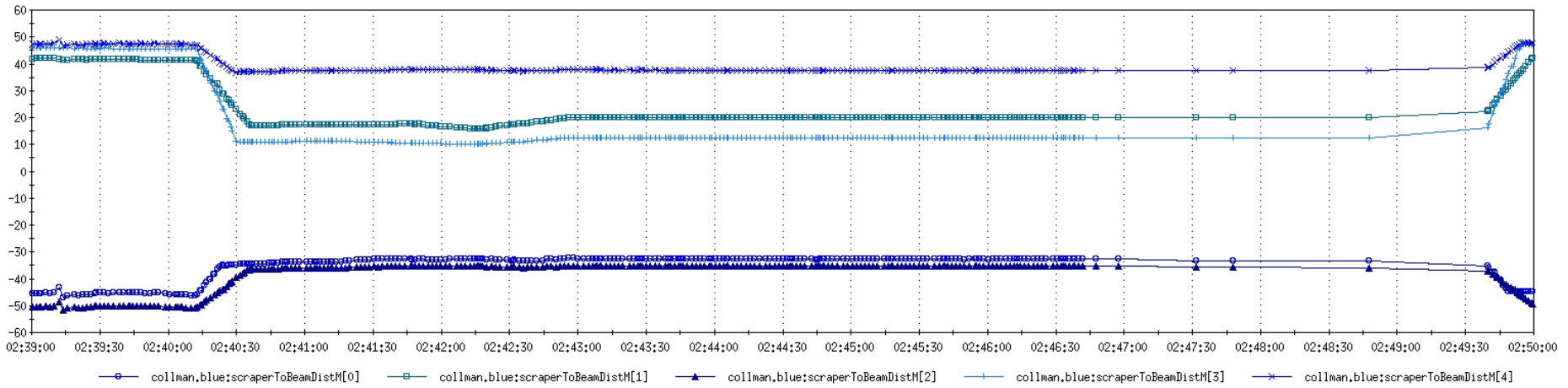
collman.blue:scraperToBeamDistM[4]


Blue Pin Diodes
PD counts (10 or 1 Hz)
Time (Start Fill = 0)
h0/v0
h1
v1
h2
v2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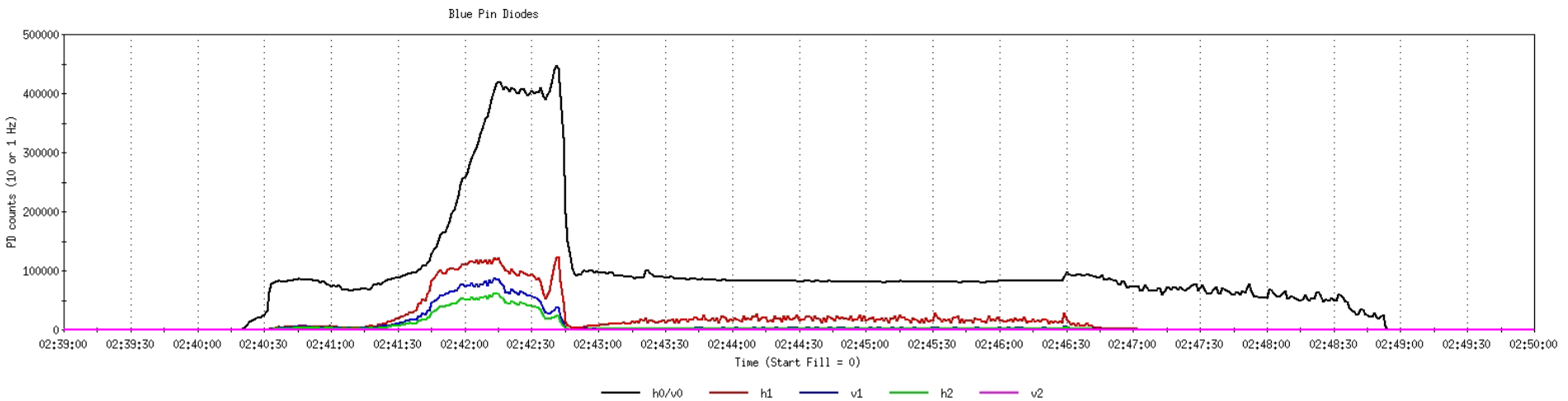
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h0/v0
h1
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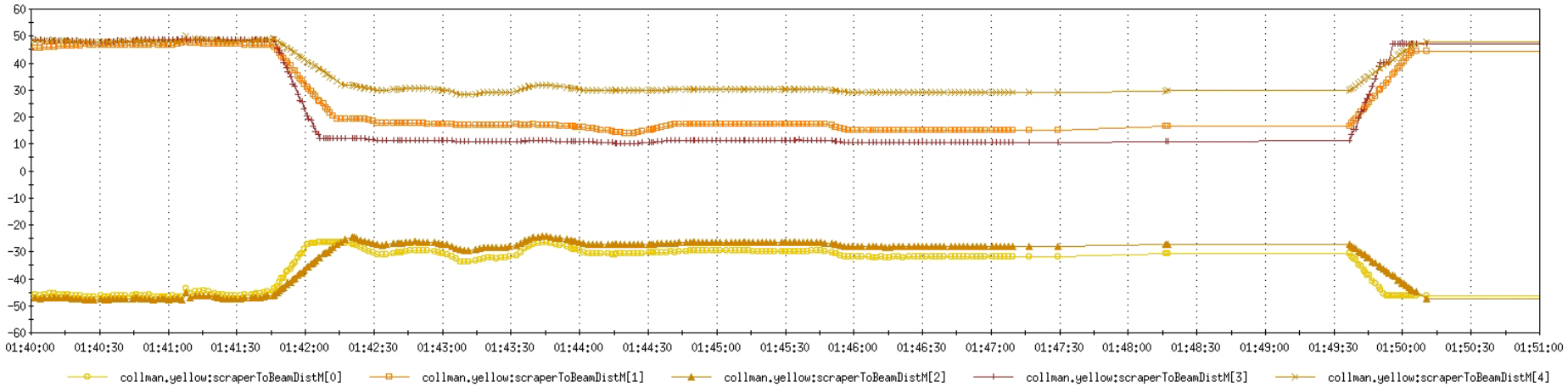
v2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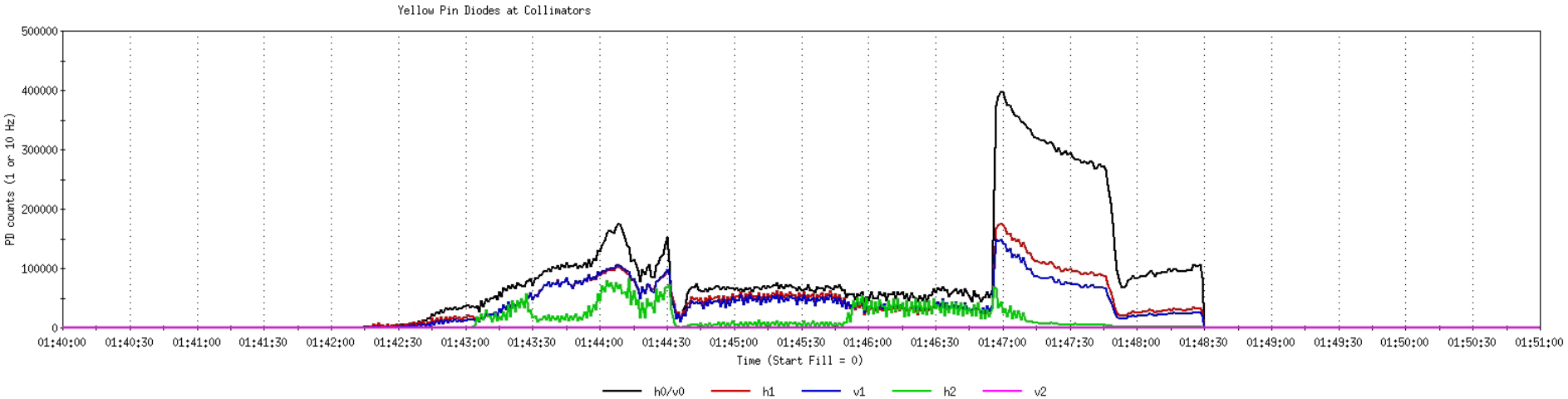
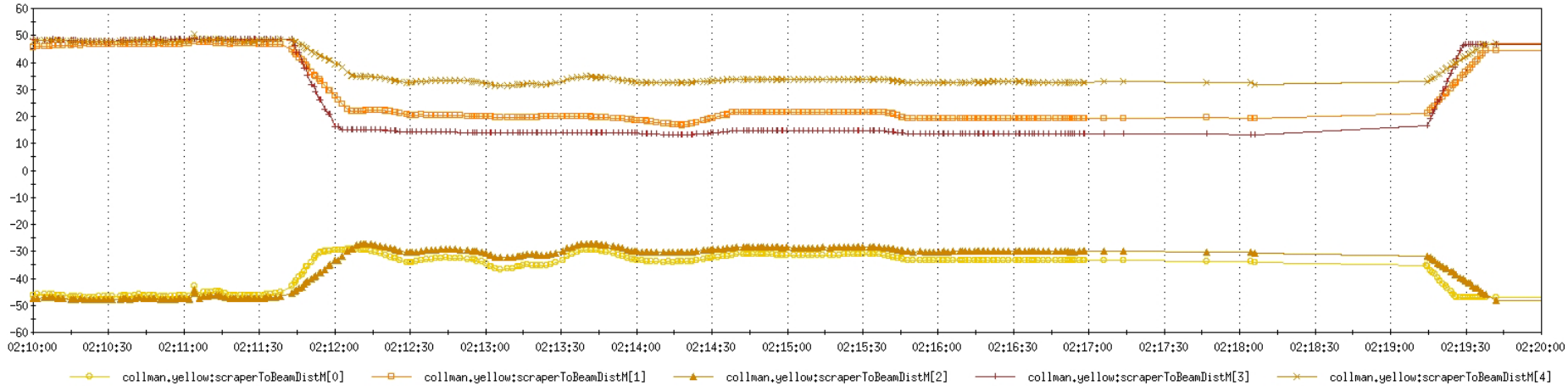

Yellow Pin Diodes at Collimators
PD counts (1 or 10 Hz)
Time (Start Fill = 0)
h0/v0
h1
v1
h2
v2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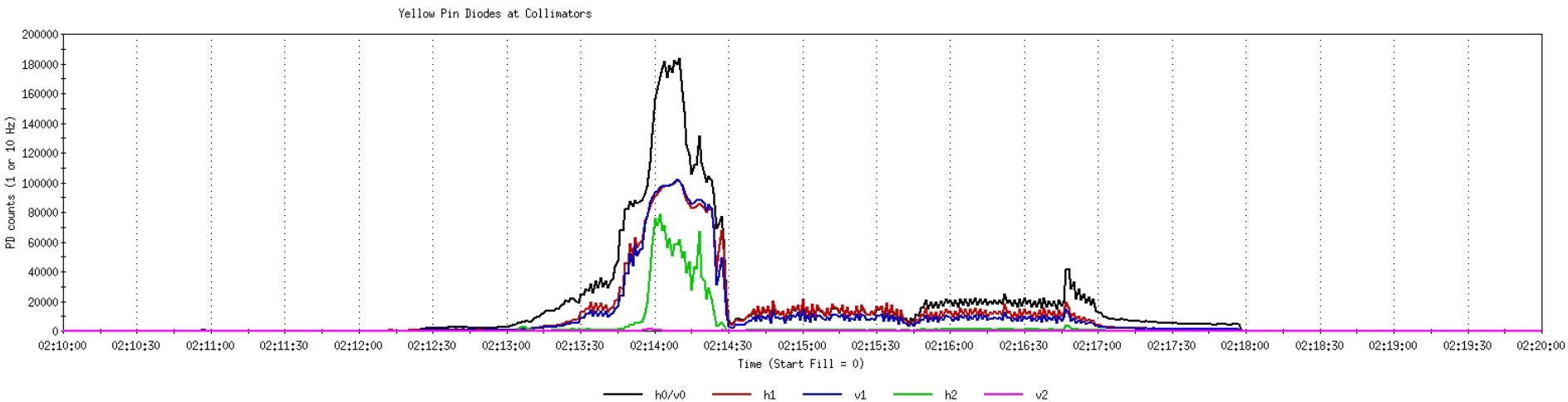
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h0/v0
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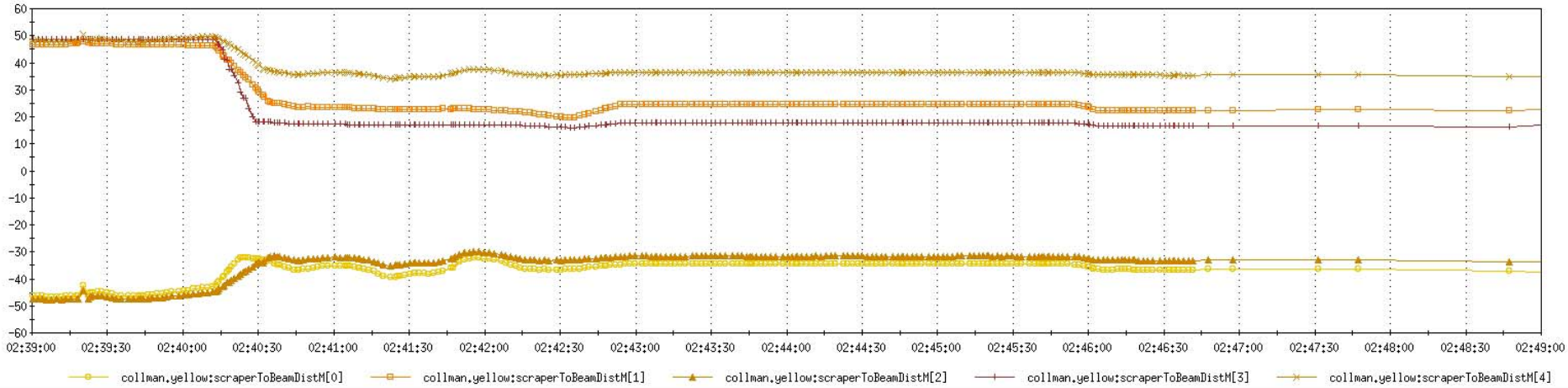
v1
h2
v2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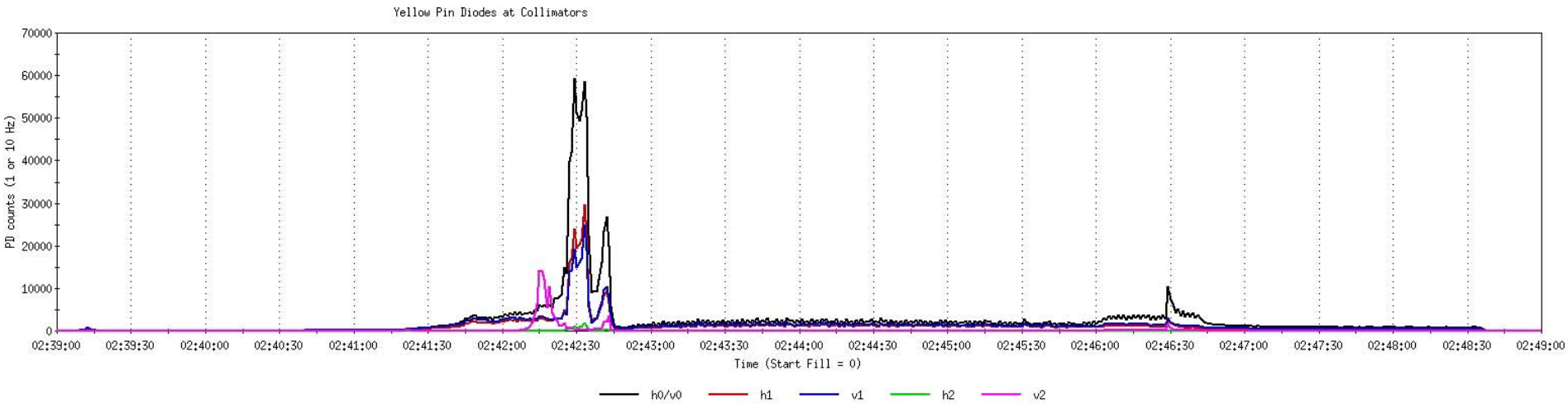
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PD counts (1 or 10 Hz)
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h0/v0
h1
v1
h2
v2