Fermilab AEM: MiniBooNE

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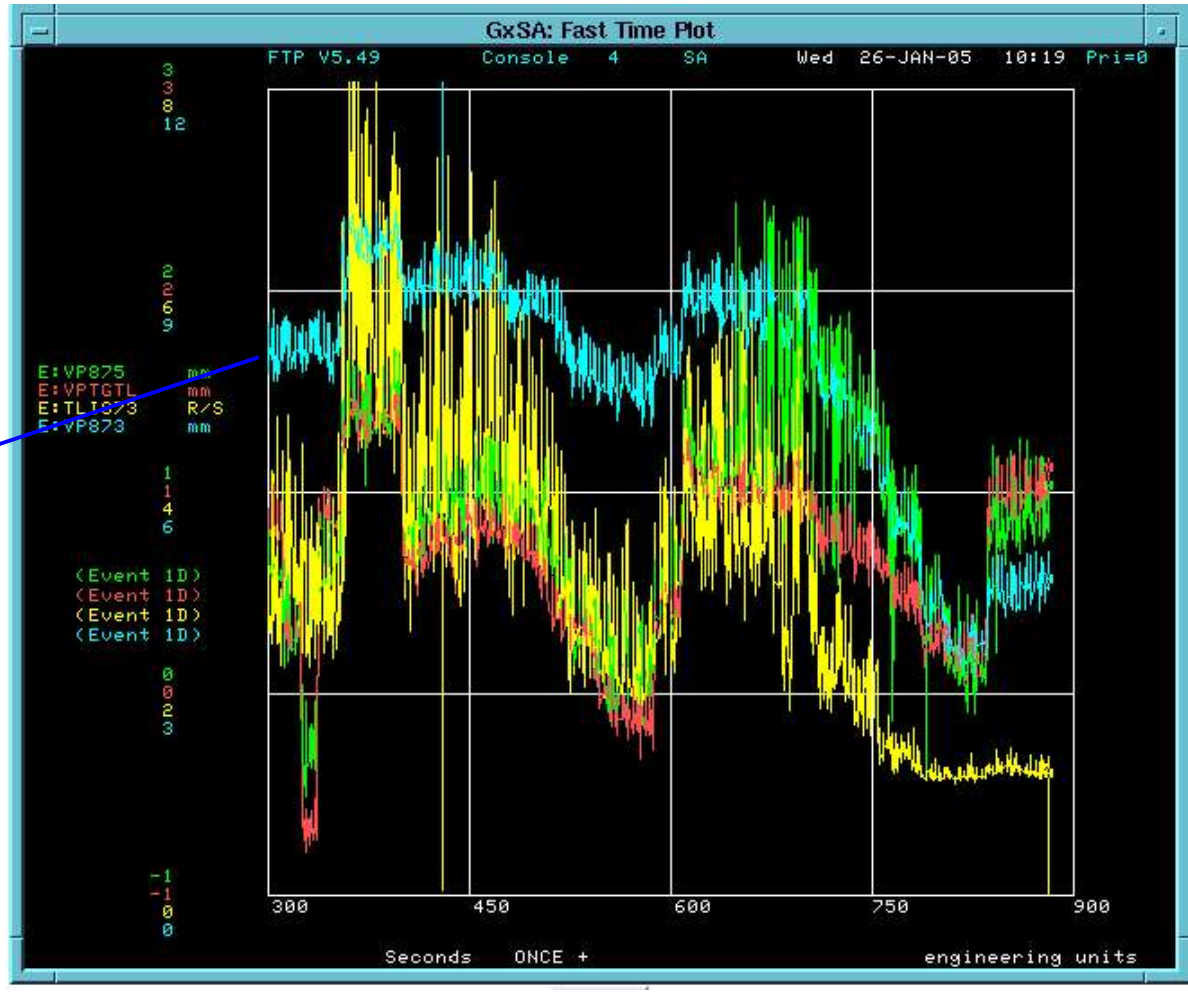
Fermilab

1/31/05

Activities in the past week

- Beamline work
  - tuning eliminated trips at TLI873

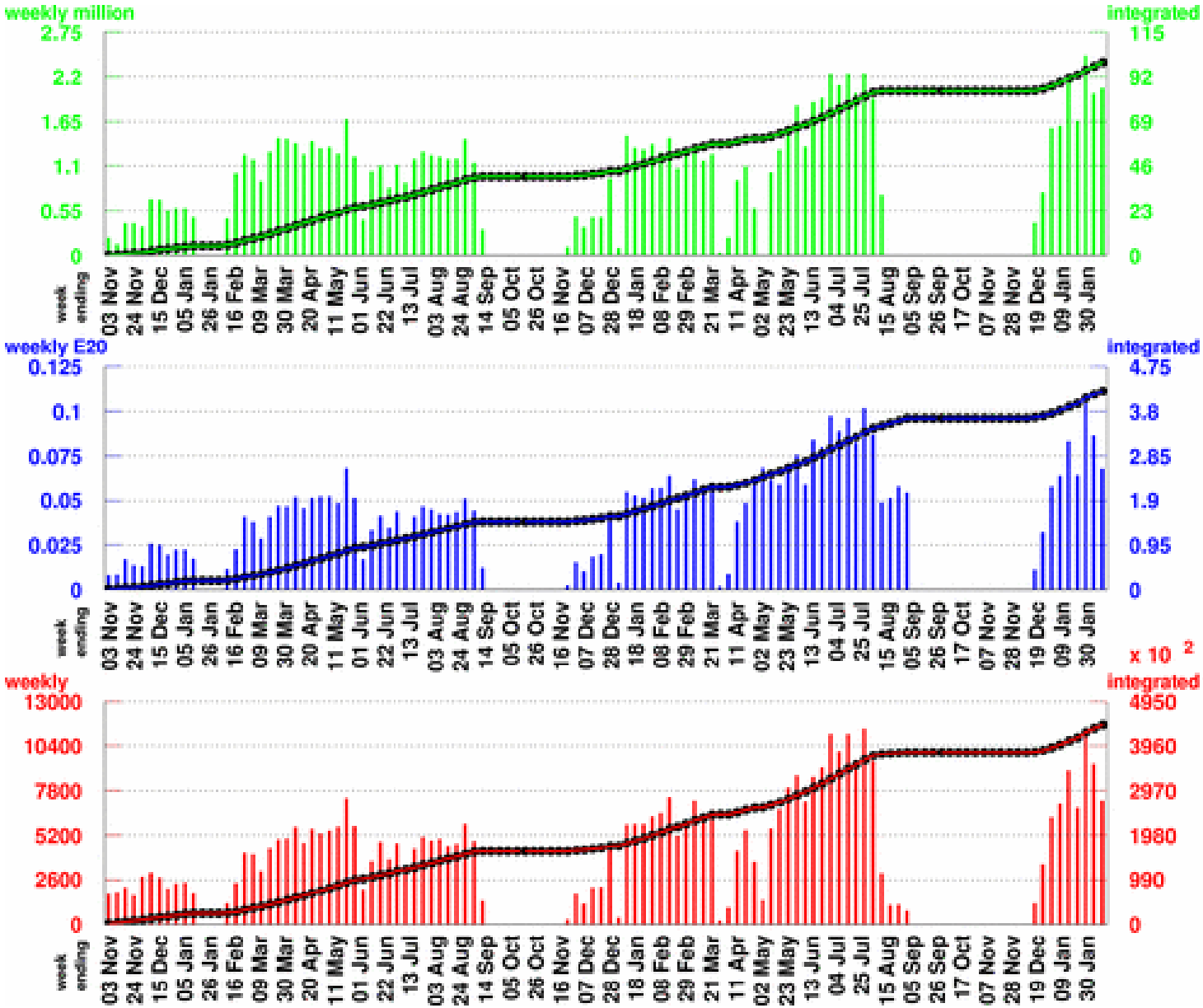


Position not constrained with Autotune, thus the need for additional tuning

Activities con't

- Beamline trips in non-MBooNE events
  - Loss monitors are to prevent 1-pulse accident
  - Trips in non-M'BooNE events don't prevent irradiation of the line
  - Implement temporary solution:
    - Raise limits/mask individual monitors (TLI860)
  - AD-EB experts working on permanent solution

Progress Update



Number of Horn Pulses

To date: 99.53 million

Largest week: 2.46 million

Latest week: 2.06 million

(both horns)

Number of Protons on Target

To date: 4.2353 E20

Largest week: 0.1084 E20

Latest week: 0.0677 E20

Number of Neutrino Events

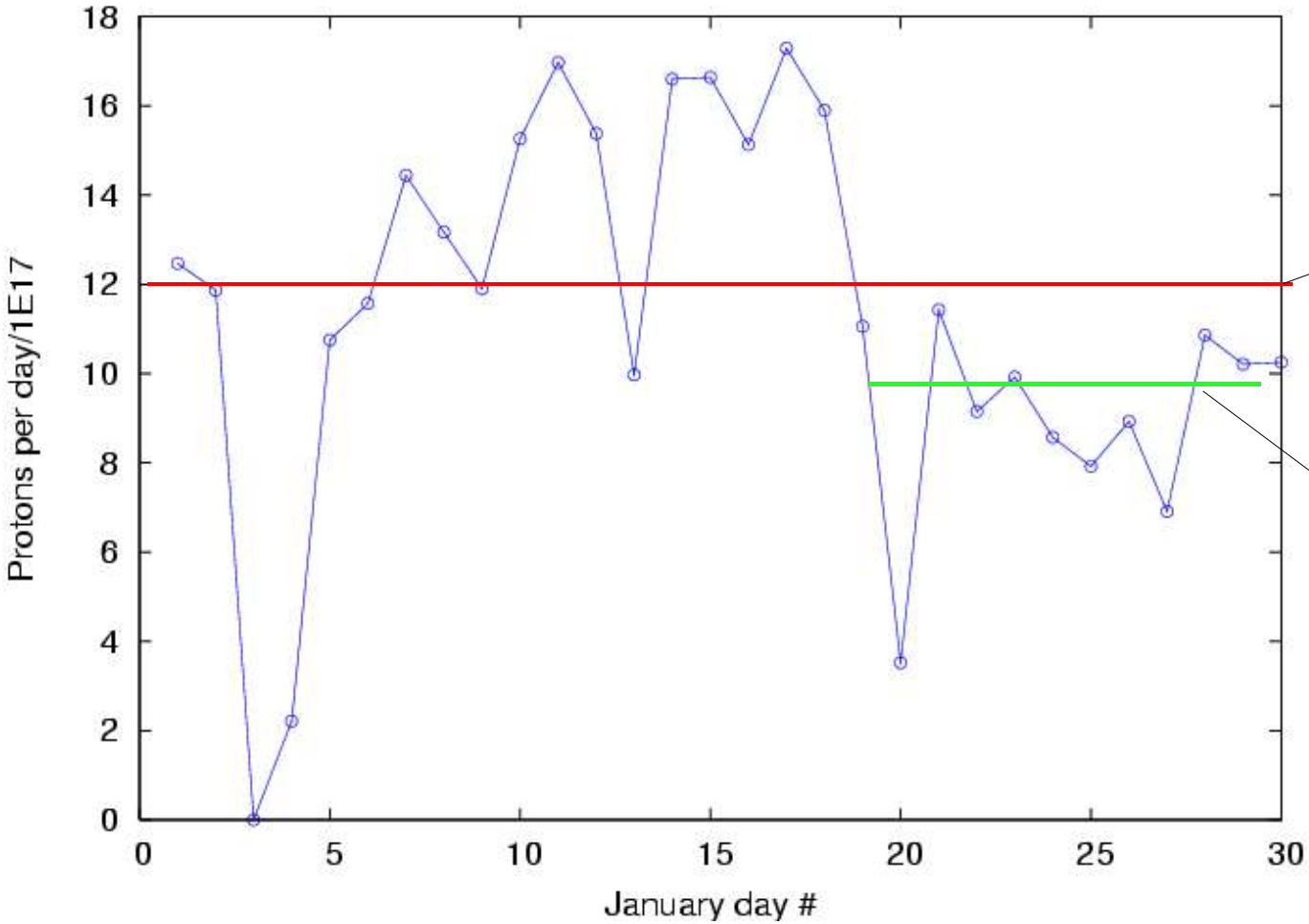
To date: 442351

Largest week: 11447

Latest week: 7164

January Summary

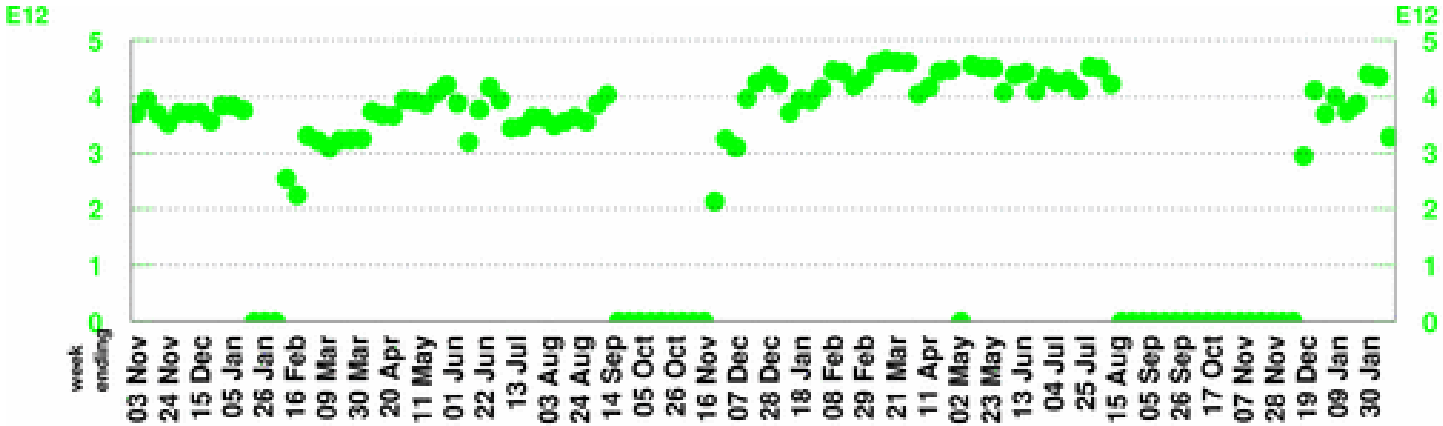
Red line represents “arbitrarily” chosen stable running daily average



9 weeks to 5E20

11.5 weeks to 5E20

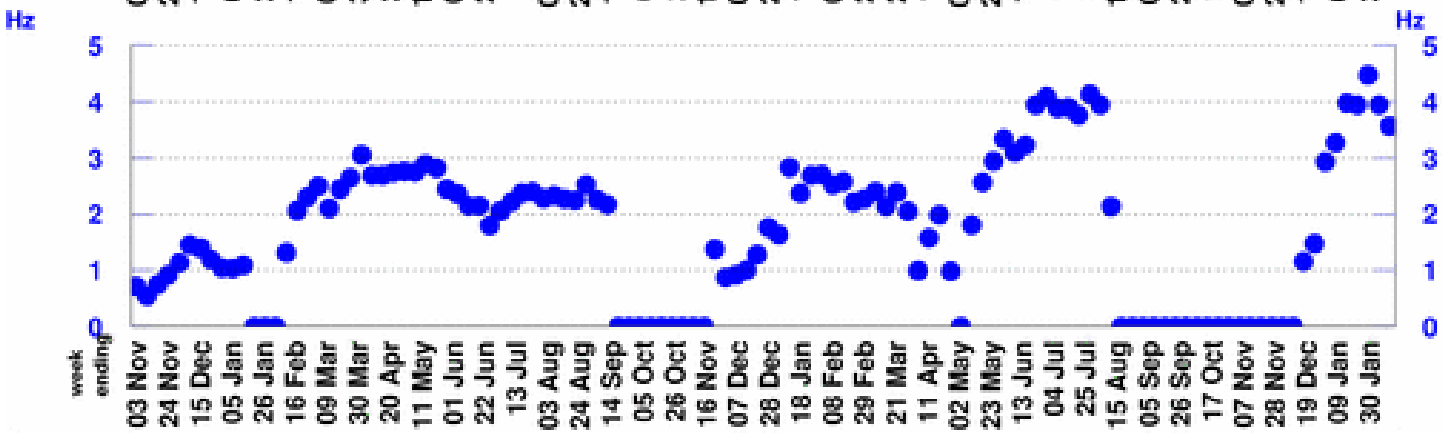
Proton Delivery



POT per Horn Pulse

Largest week: 4.66 E12

Latest week: 3.28 E12

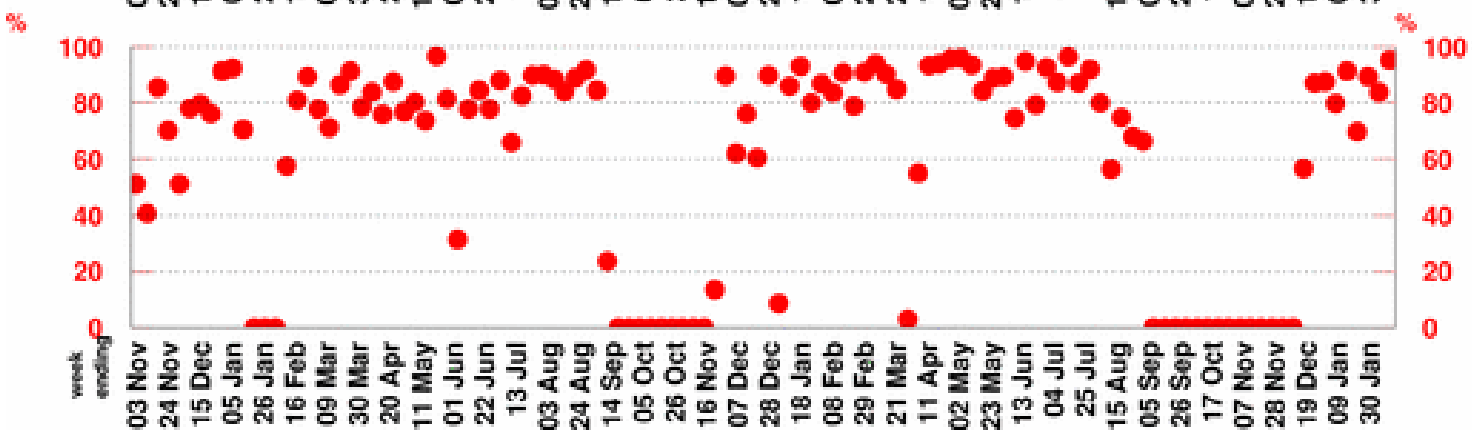


Horn Rate

(for time periods with beam)

Largest week: 4.48 Hz

Latest week: 3.57 Hz



Beam Uptime Fraction

(fraction of time with beam)

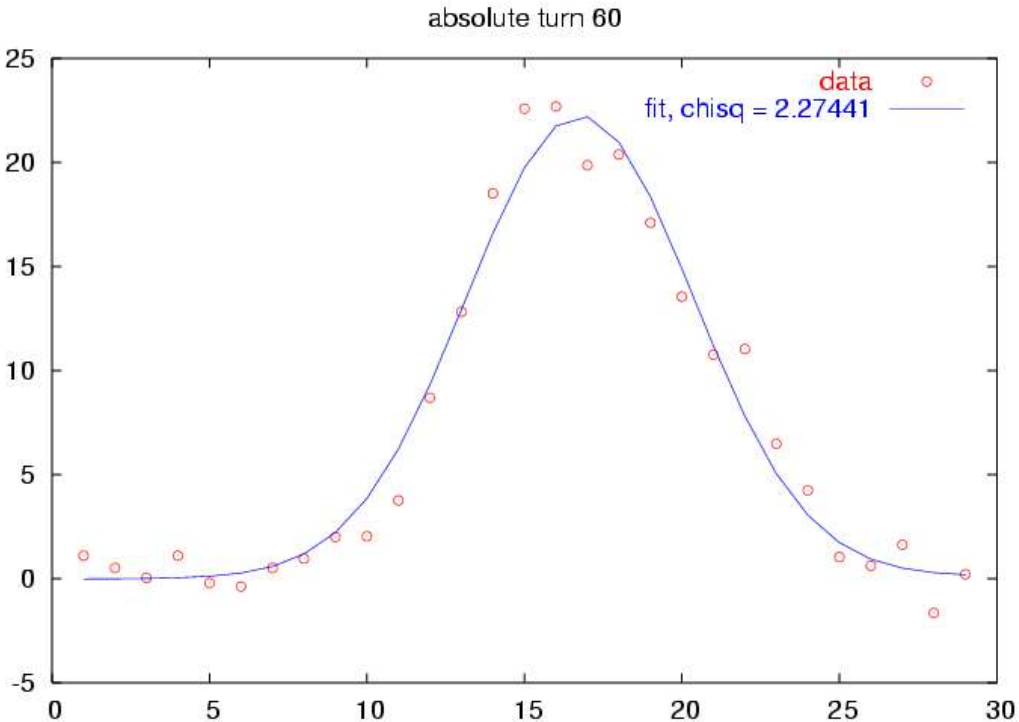
Largest week: 96.6 %

Latest week: 95.3 %

Other activities

- Attempt to help quantify beam properties during tunning
  - Turn-by-turn beam profiles using Booster IPM for different tuning conditions
  - Compare non-Gaussian to Gaussian integrals
- Last Wednesday before tuning <L/G> = 4.5%, after 3.5%, averaging 1000 turns.

Compare with “stable” running, ~2.5%



Analysis done by Matt Drake (IMSA)

Summary

- Work on beamline trip issues
  - tuning
  - Non-M'BooNE event loss monitor trips
    - temporary & work in progress
- About 2/3 of “stable running” proton delivery due to Booster tuning
  - Hopefully new stable running conditions will quickly put us back on track