

NuMI-MINOS status report

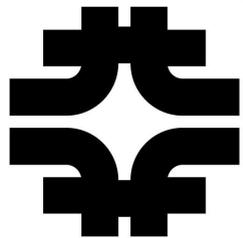
Phil Adamson

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for the

MINOS collaboration



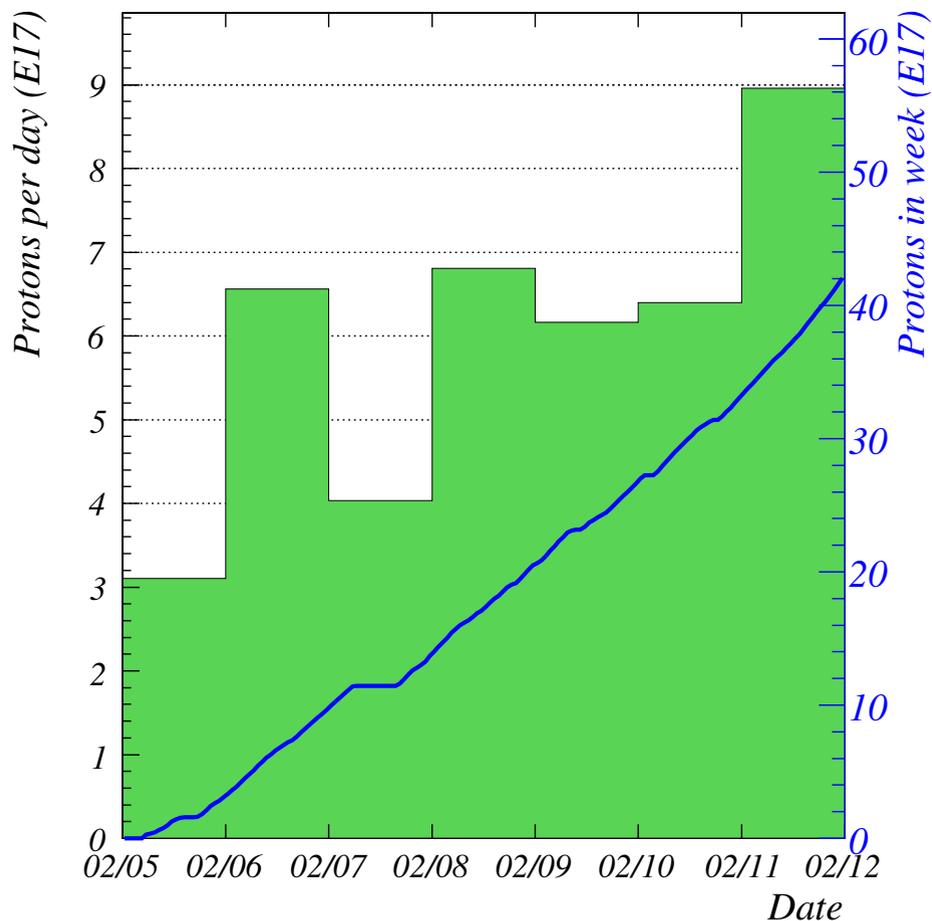


This week

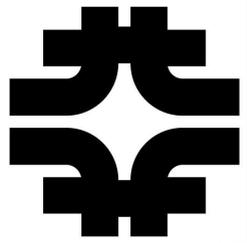
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Week to 00:00 Monday 12 February 2007

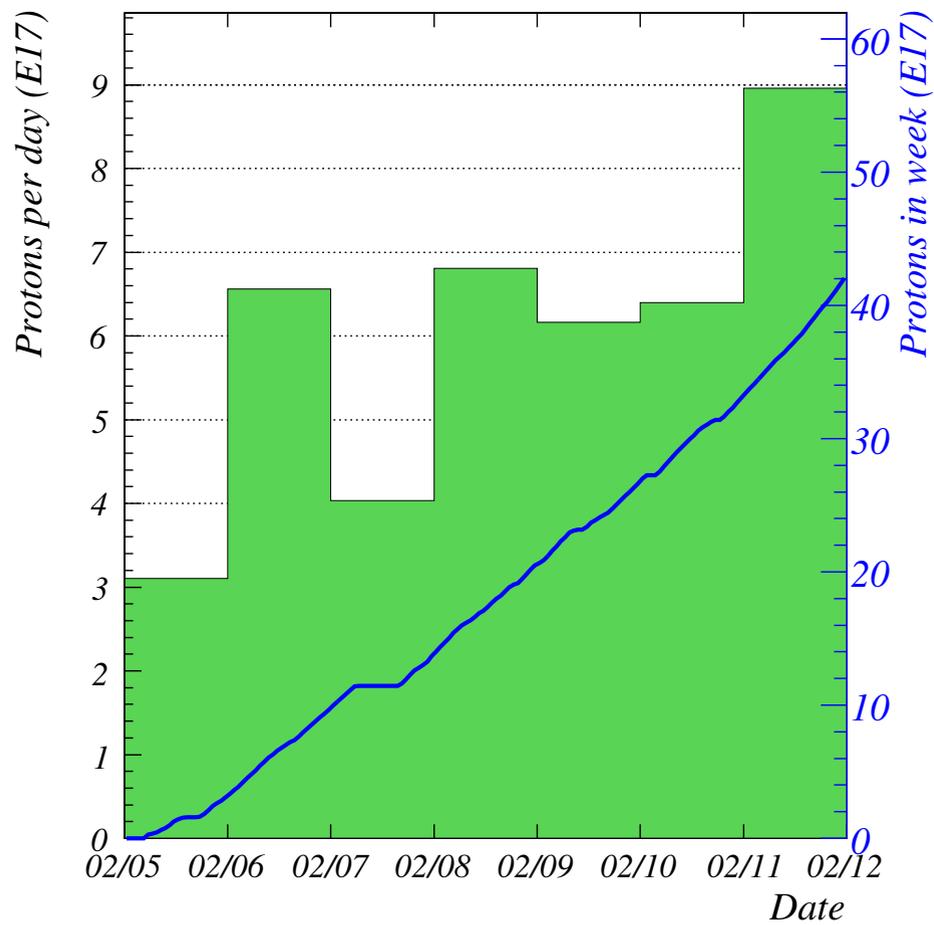


- ▷ The week started poorly
- ▷ Approaching normality by the weekend
- ▷ Recycler problems on Sunday were NuMI's gain (interleaving at large stack sizes)
- ▷ 4.21×10^{18} protons this week
- ▷ Detectors running well
 - ⇒ Near detector 99.0% uptime
 - ⇒ Far detector 95.9% uptime
 - DAQ maintenance at start of week

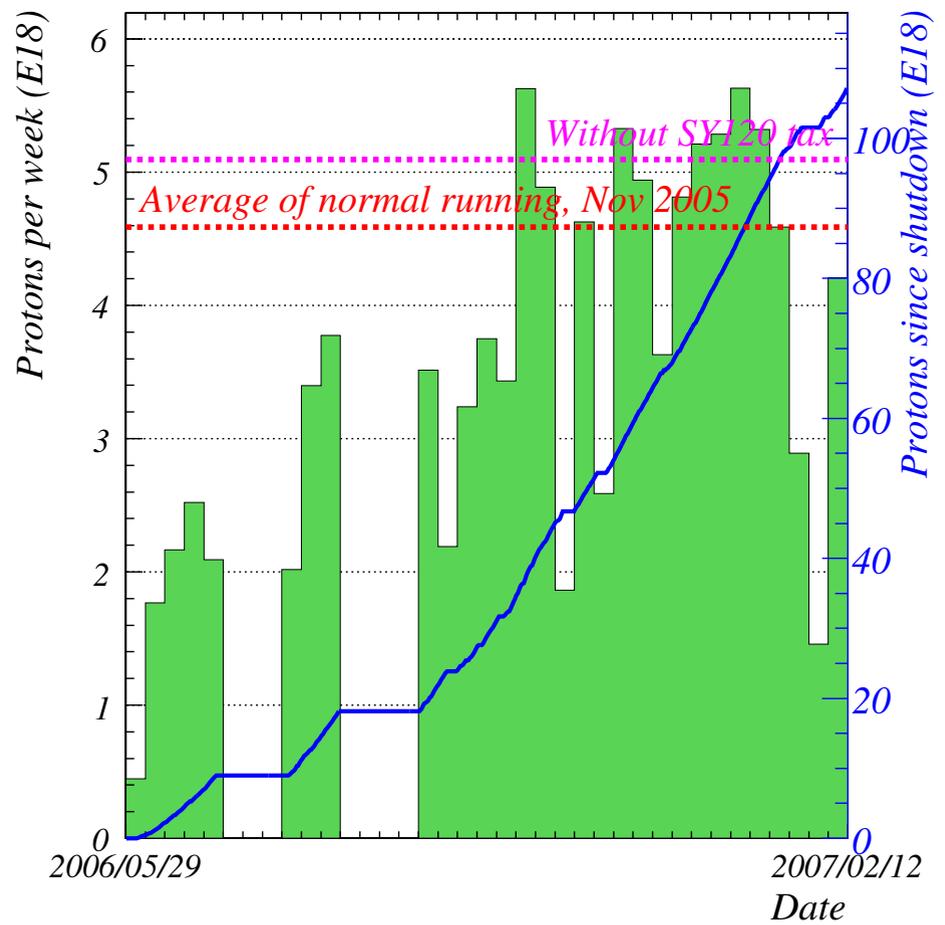


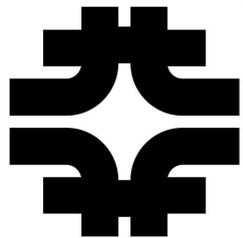
This week

Week to 00:00 Monday 12 February 2007



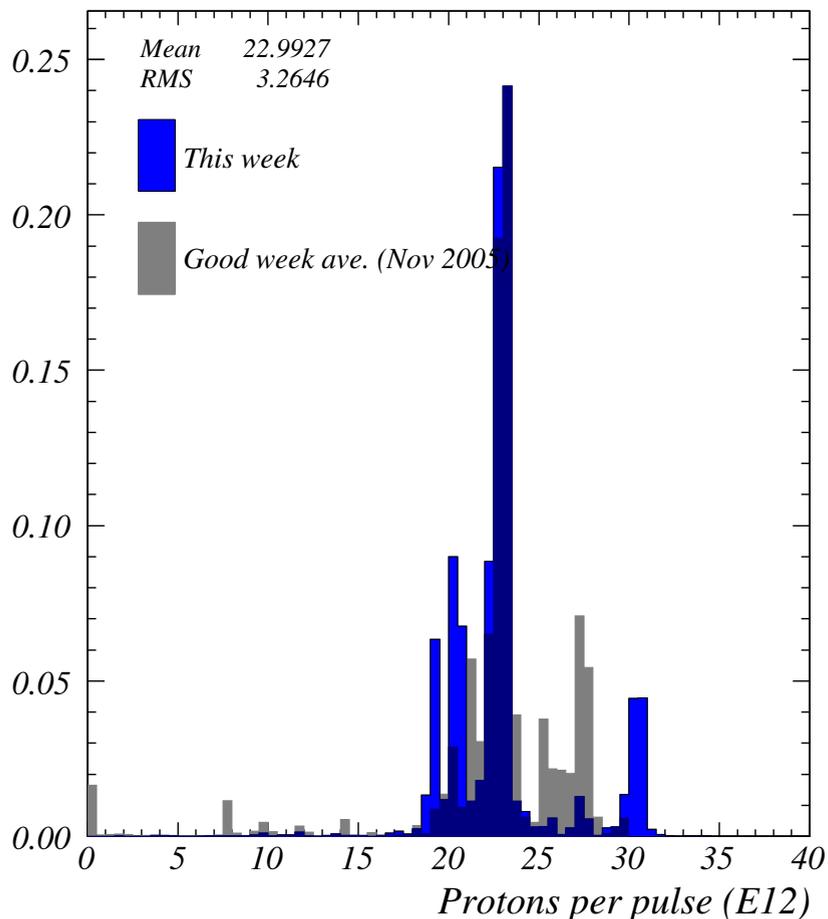
Weekly protons to 00:00 Monday 12 February 2007



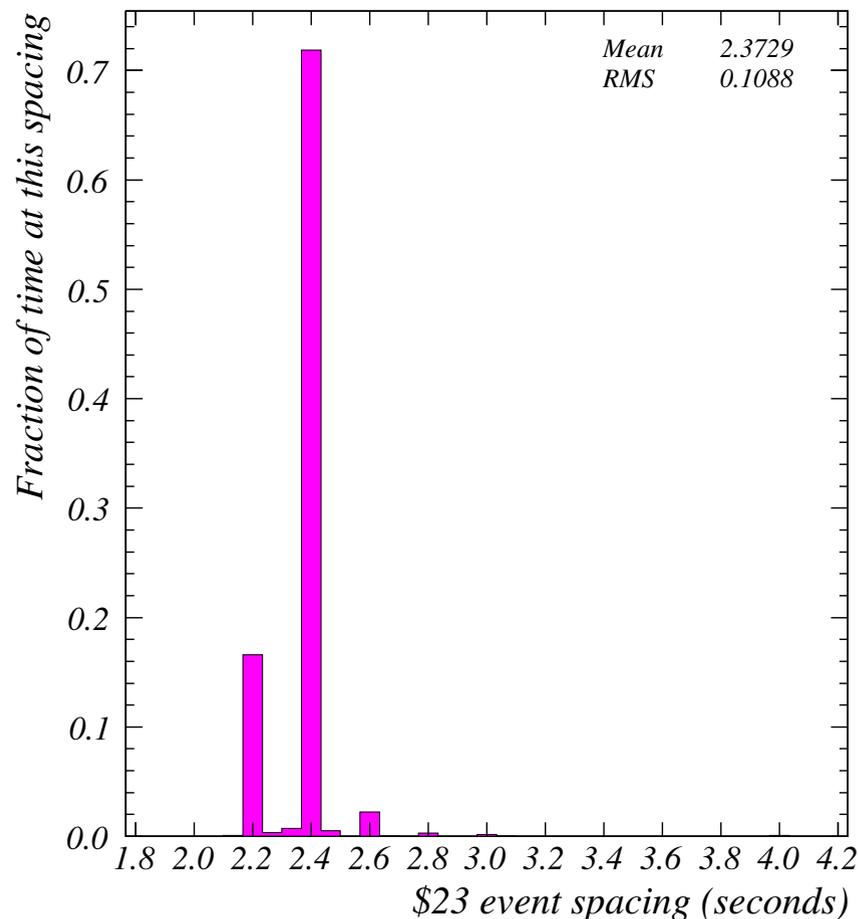


In detail...

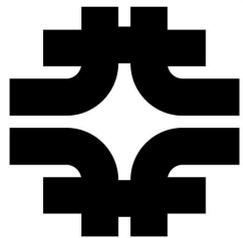
Week ending 00:00 Monday 12 February 2007



Week ending 00:00 Monday 12 February 2007

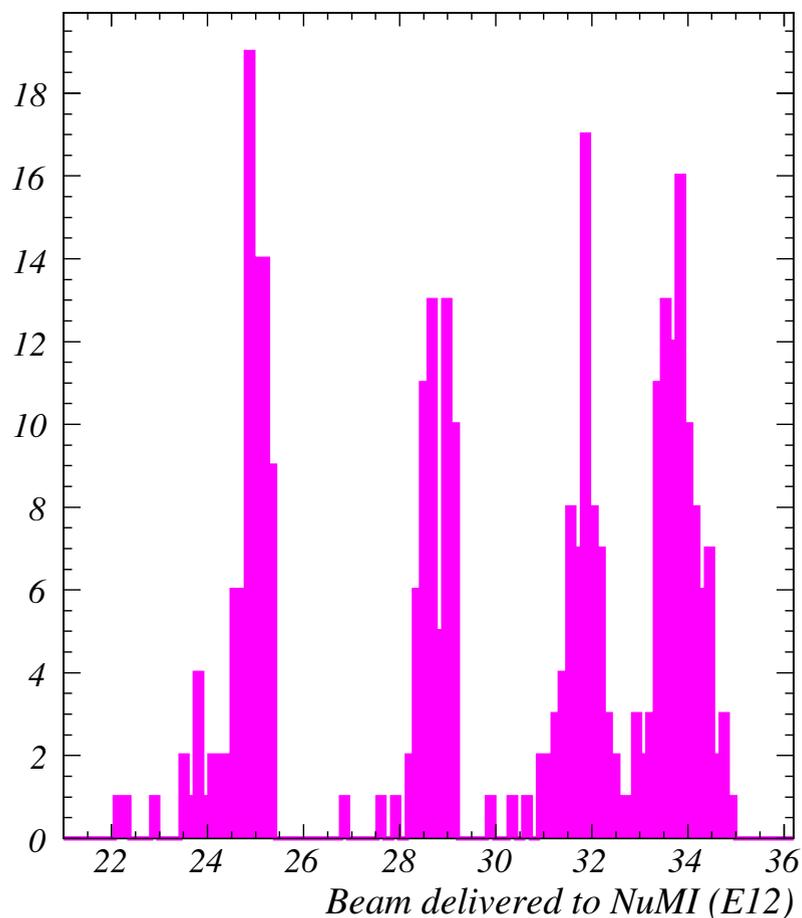


- ▶ Low intensity at start of week
- ▶ Recycler problems → large stacks → 2.6s spacing and interleaving

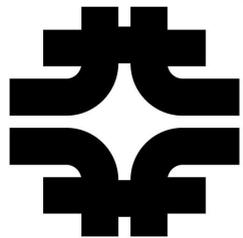


11-batch Slip-stacking

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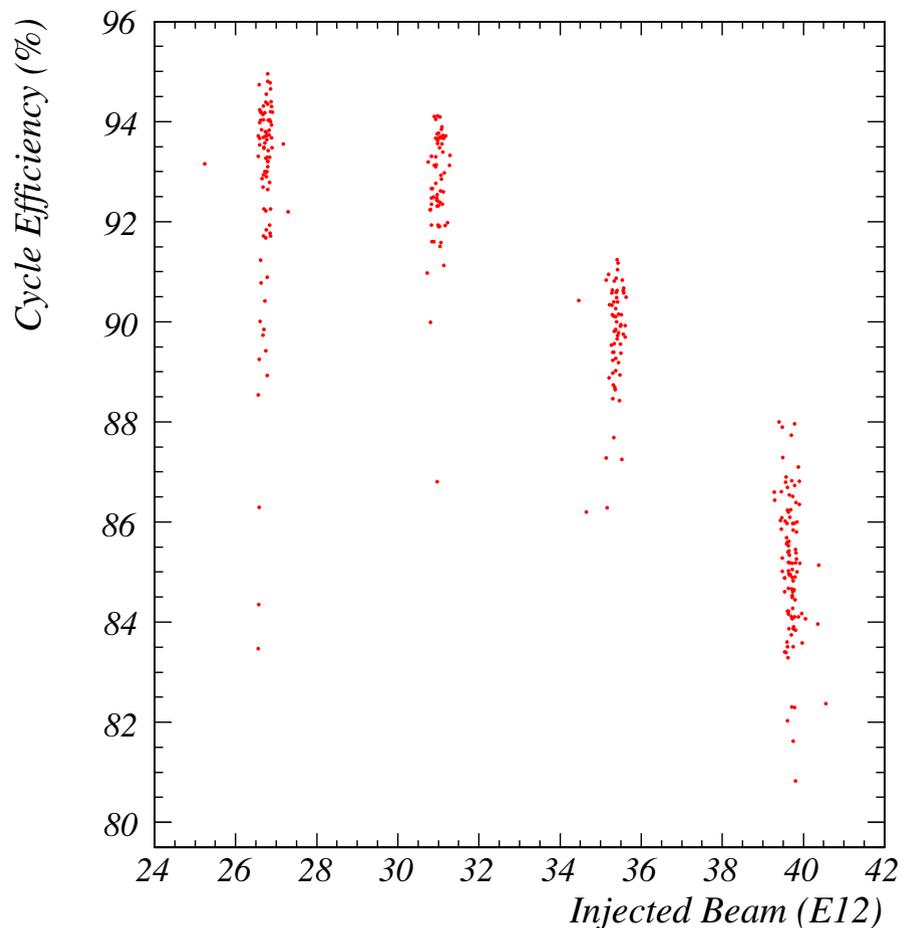


- ▷ As you heard from Kiyomi, Friday saw the first successful test of sending 11-batch slip-stacked beam to NuMI.
- ▷ Plot shows 6, 7, 8 and 9 booster turns.
- ▷ Highest intensity pulse read 35.00×10^{12} on MI DCCT and 34.98×10^{12} on the NuMI toroid. **This is a record for both MI and NuMI.**
- ▷ Best performance with the current 2+5 mode NuMI-only cycle gives around 33×10^{12} protons per pulse.
- ▷ This study is very encouraging, but doesn't mean we're ready to run 11-batch slip-stacking operationally next week.



What needs to happen

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- ▷ Efficiency for 2+5 mode $\sim 95\%$
- ▷ 7 turns is probably runnable
- ▷ More tuning
 - ⇒ RF work
 - ⇒ Transverse damper
- ▷ MI collimators for big intensity gains
- ▷ Also need a little work on the TLG program for this to work operationally
 - ⇒ Cycle is 2.2s long, but D69 makes you place it every 2.266s because of the booster prepulse. This needs to be fixed.

These efforts are orthogonal to the effort to run pbar at a 2.2s cycle rate. That is an immediate 10% gain for NuMI, and MINOS strongly encourages the efforts of the pbar department towards this goal.