UPCOMING CONFERENCE PRESENTATIONS

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8 July 2011

Upcoming Conferences

- Poster at PANIC 2011
  MIT, Cambridge MA, 26 July
- Talk, parallel session, at APS-DPF
  Brown University, Providence RI, 11 August
- Title
  MICE step I: first measurement of emittance with particle physics detector

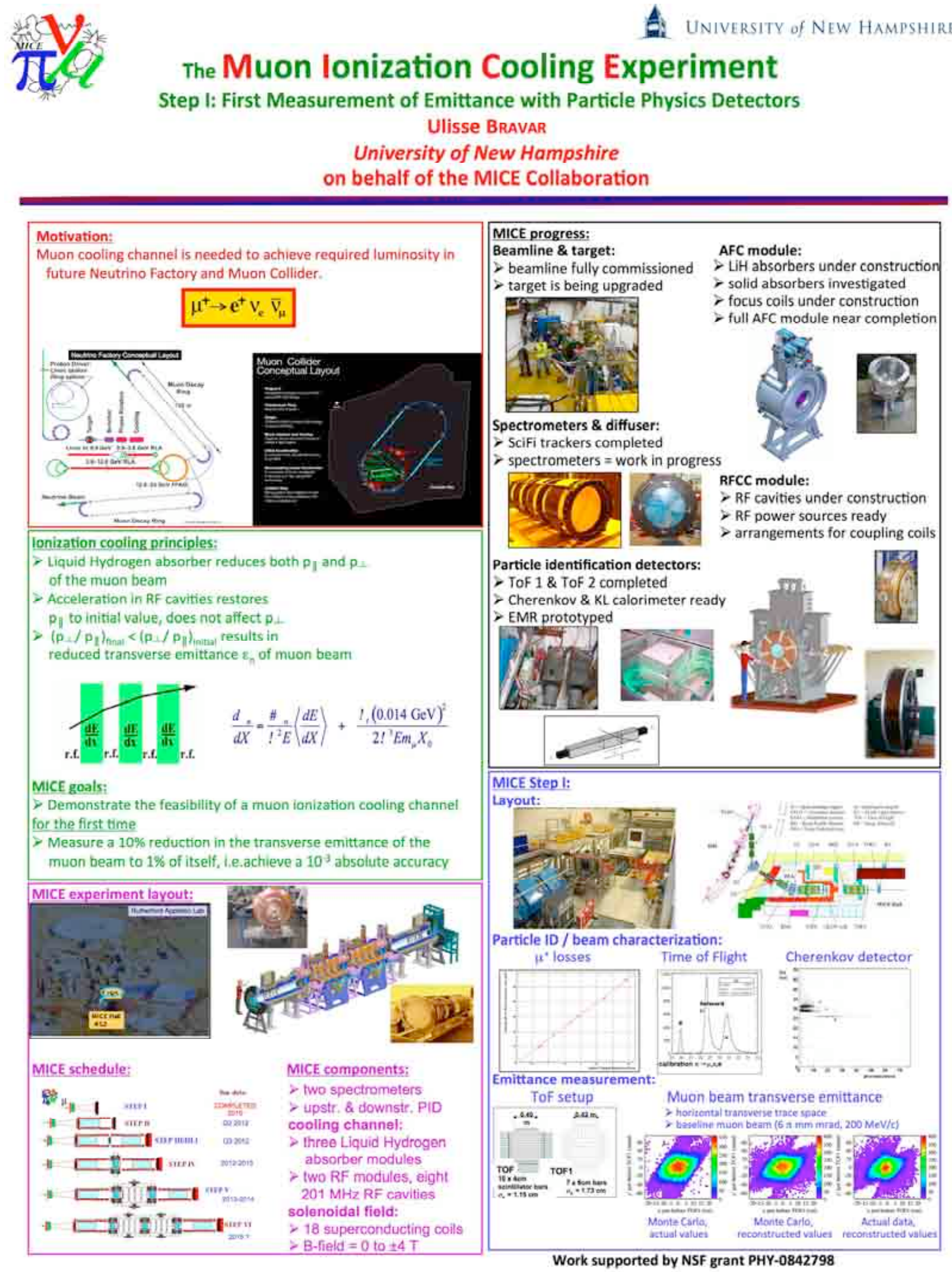
Status

- Poster for PANIC 11 ready
  minor changes still possible
- Talk for APD-DPF: work in progress
  haven’t even started yet

- Same results & same figures presented at both conferences

Poster

- Five sections



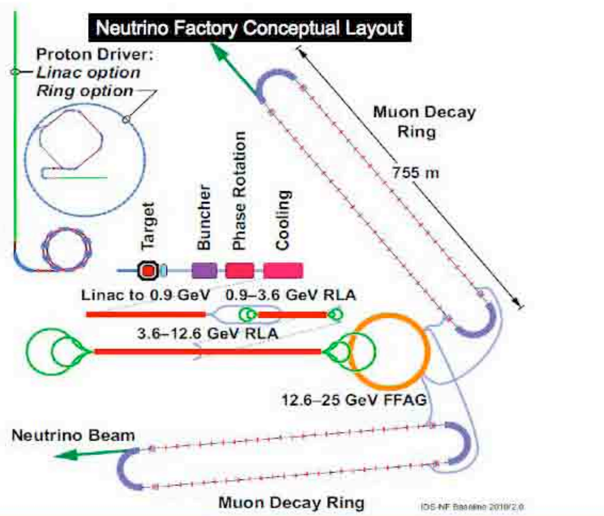
Poster 1

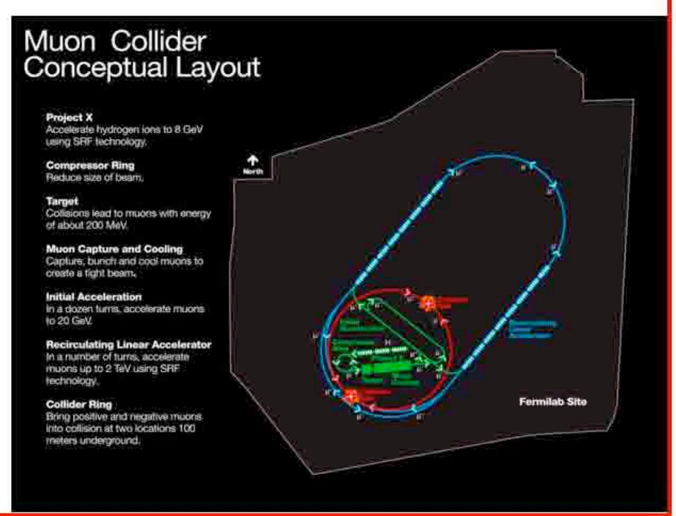
- Usual ‘old’ remarks

Motivation:

Muon cooling channel is needed to achieve required luminosity in future Neutrino Factory and Muon Collider.

$$\mu^+ \rightarrow e^+ \nu_e \bar{\nu}_\mu$$





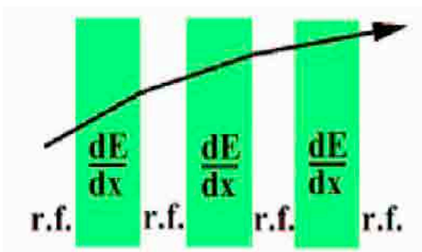
Poster 2

need to fix symbols
in cooling formula

- Again, usual remarks

Ionization cooling principles:

- Liquid Hydrogen absorber reduces both $p_{\|}$ and $p_{\perp}$ of the muon beam
- Acceleration in RF cavities restores $p_{\|}$ to initial value, does not affect $p_{\perp}$
- $(p_{\perp}/\ p_{\|})_{final} < (p_{\perp}/\ p_{\|})_{initial}$ results in reduced transverse emittance ε_n of muon beam



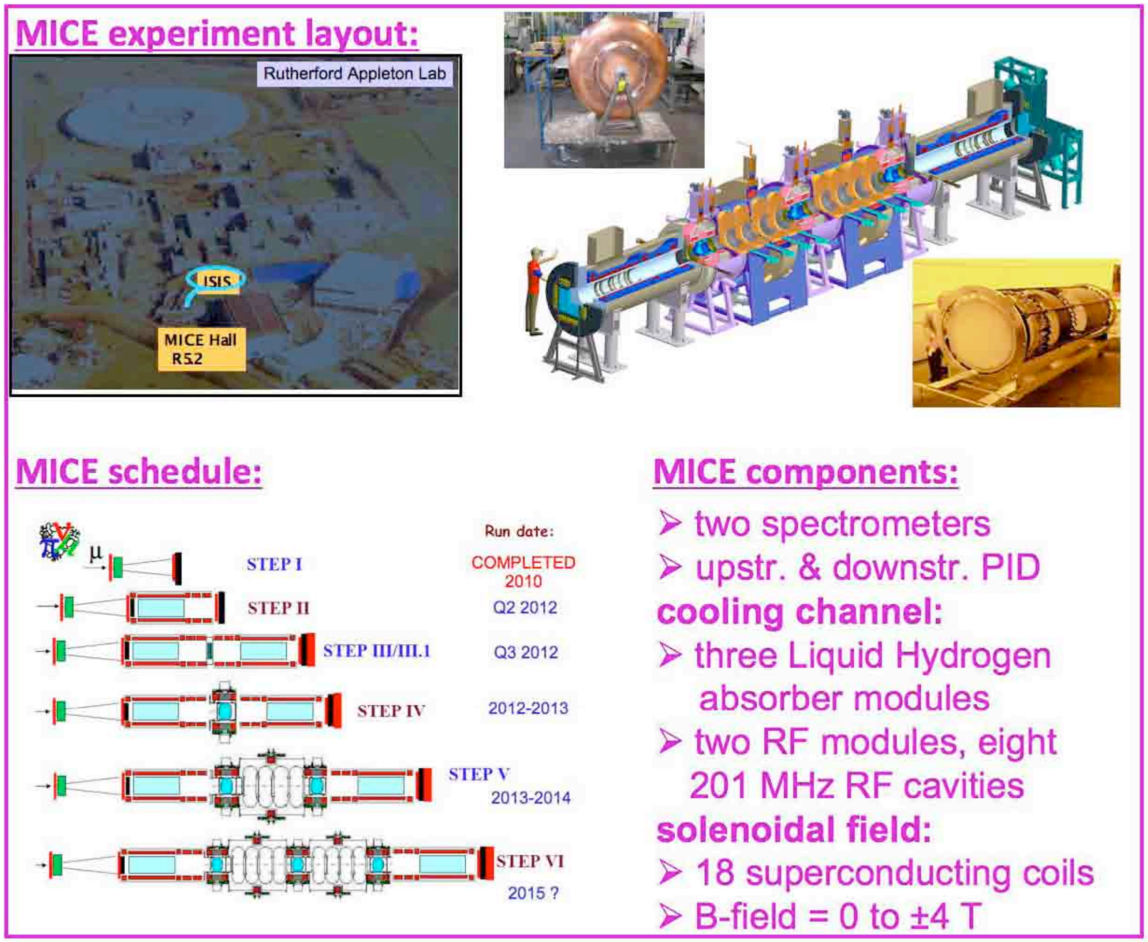
$$\frac{d\ _n}{dX} = \frac{\#\ _n}{!\ ^2 E}\left\langle \frac{dE}{dX} \right\rangle + \frac{!\ _t (0.014\ \text{GeV})^2}{2!\ ^3 E m_\mu X_0}$$

MICE goals:

- Demonstrate the feasibility of a muon ionization cooling channel for the first time
- Measure a 10% reduction in the transverse emittance of the muon beam to 1% of itself, i.e.achieve a 10^{-3} absolute accuracy

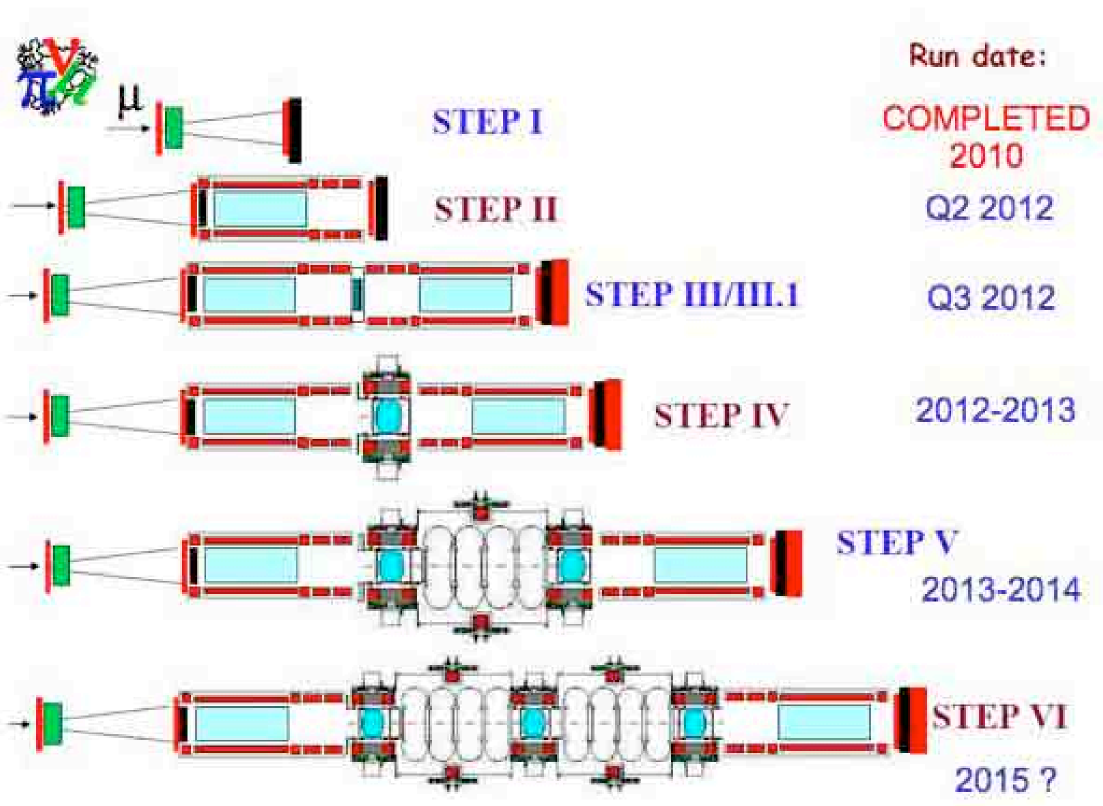
Poster 3

- MICE experiment



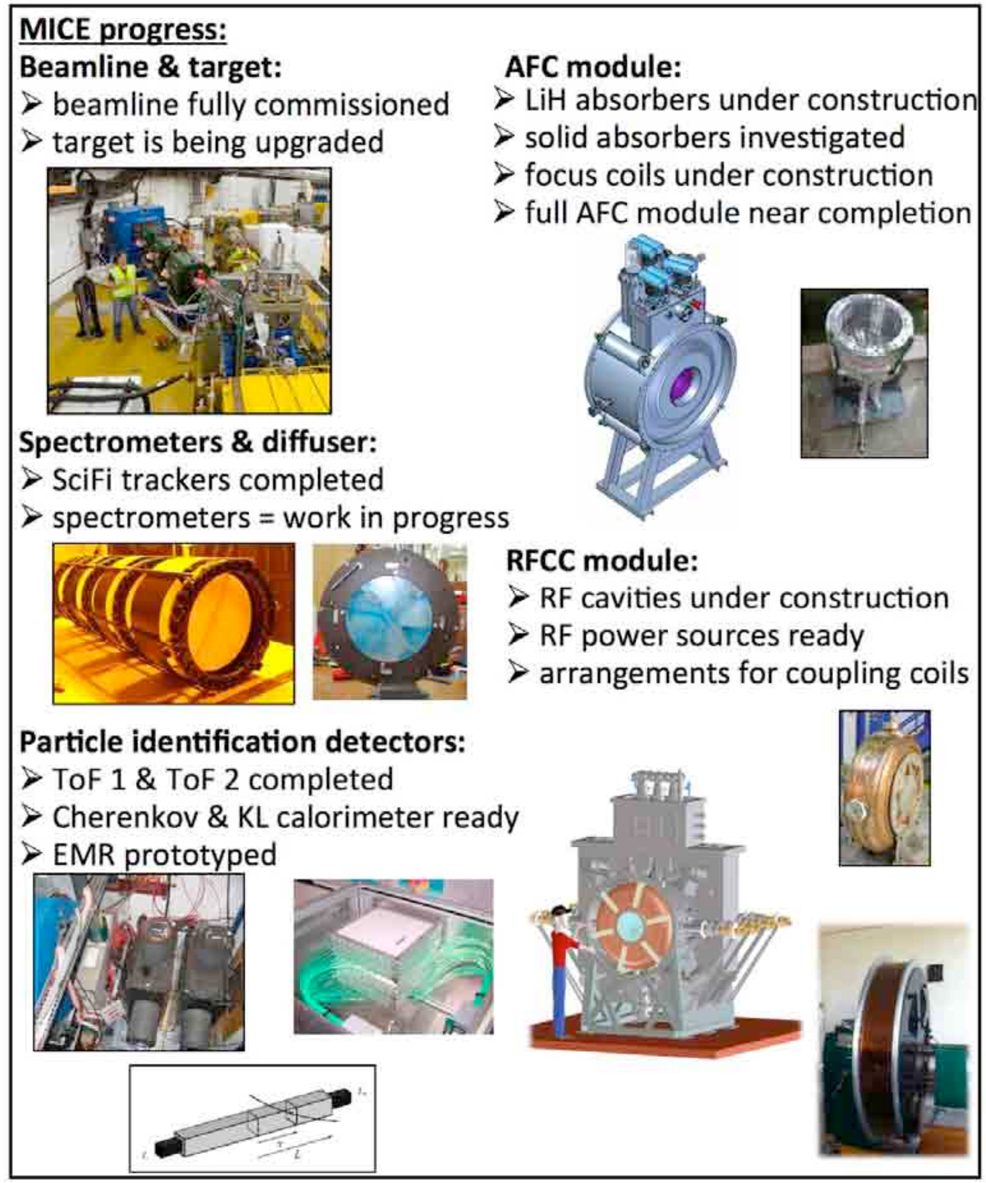
MICE Schedule

- From A. Blondel's talk
  MICE VC 141, 16 June 2011
- <u>Check dates !!!</u>



Poster 4

- Status of MICE

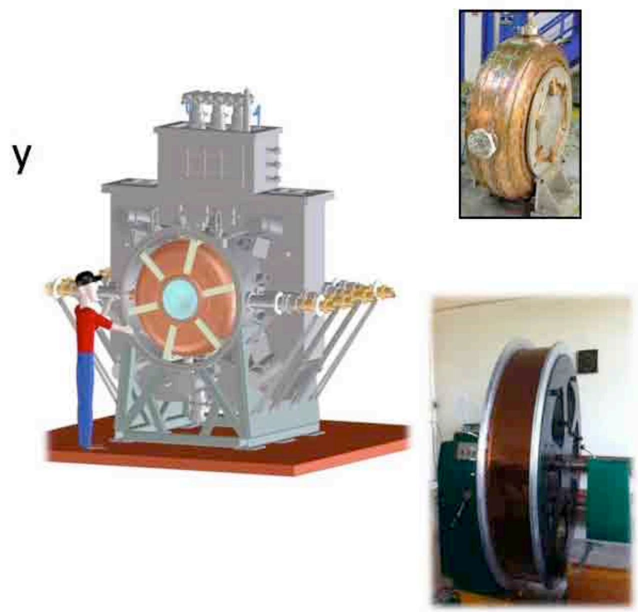


MICE Progress

- From A. Blondel's talk
  MICE Schedule Review, 23 May 2011

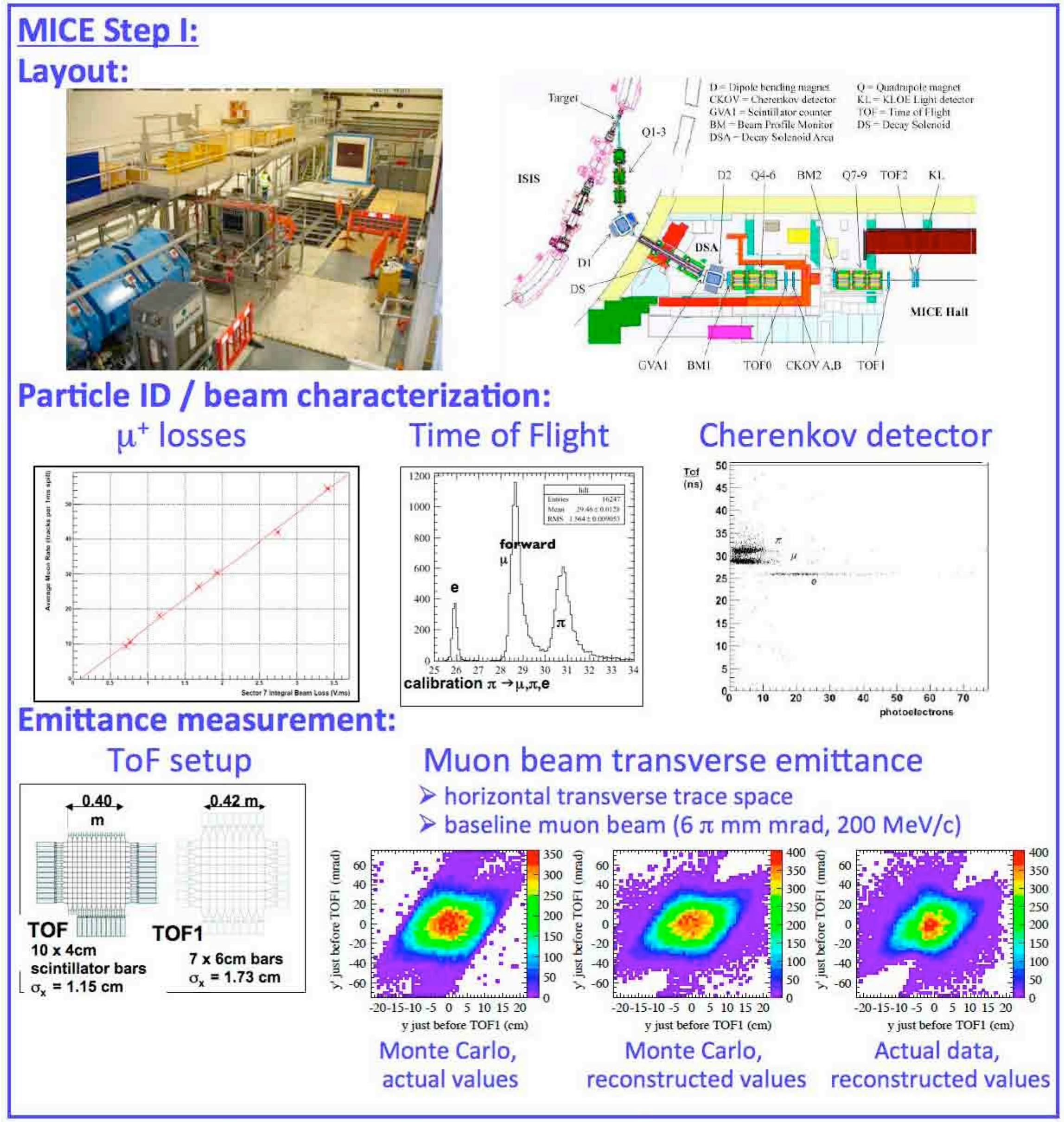
- About the
  RFCC module:

RFCC module:
- ➢ RF cavities under construction
- ➢ RF power sources ready
- ➢ arrangements for coupling coils



Poster 5

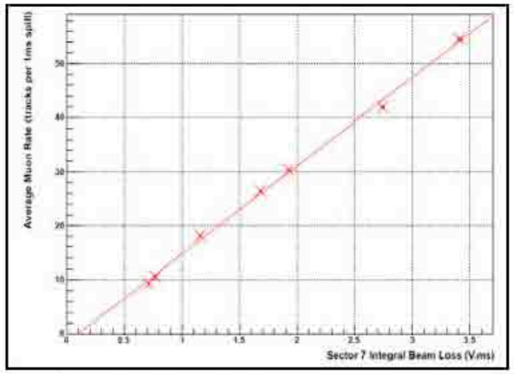
- MICE Step I



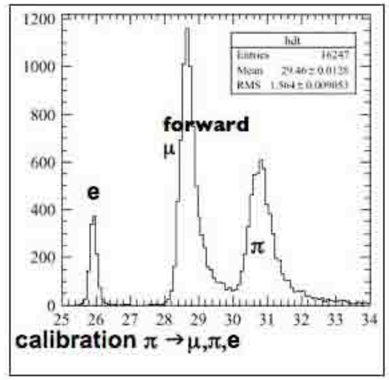
Results being presented

beamline paper

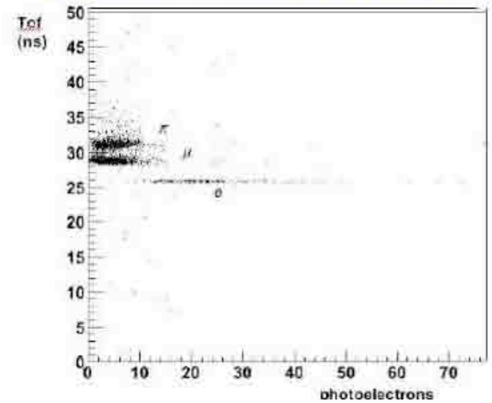
μ⁺ losses



Time of Flight



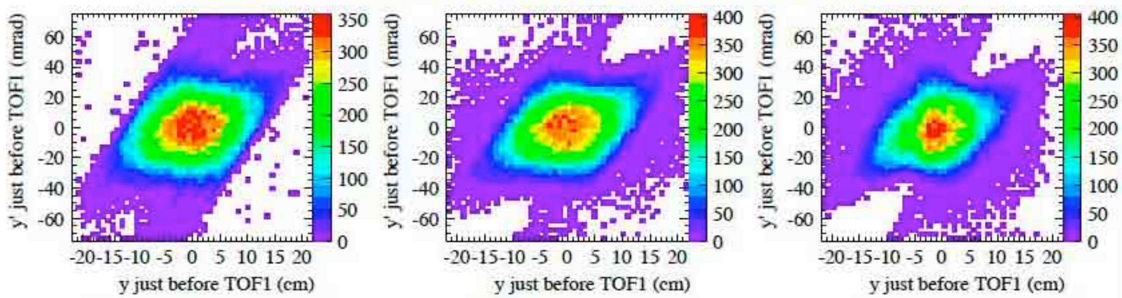
Cherenkov detector



emittance paper

Muon beam transverse emittance

- horizontal transverse trace space
- baseline muon beam (6 π mm mrad, 200 MeV/c)



Monte Carlo, actual values | Monte Carlo, reconstructed values | Actual data, reconstructed values

Conclusion

- Send comments to:
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- About two weeks remaining before
  I need to finalize poster for PANIC 2011