

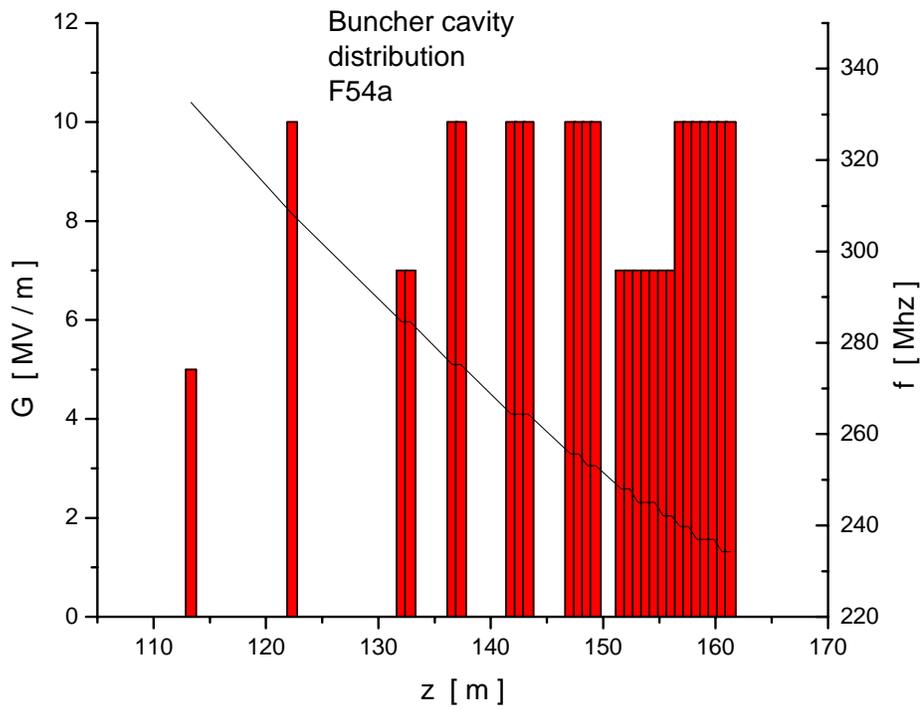
# Study 2a front end update

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BNL

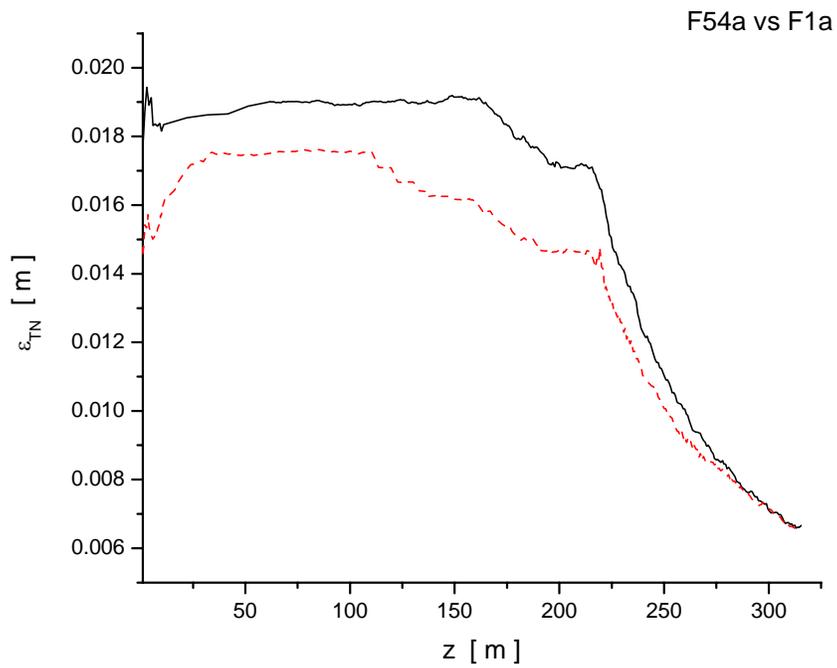
MC Friday Meeting  
28 May 2004

- froze design (F54) for APS write-up
  - data files are available on the website
  - compiling to-do list for future studies
- worked 3 weeks with Bob on optimization
  - Bob's diagnostics
  - shifted coils in buncher and rotator for RF access
  - new match into cooler
  - new match into buncher
  - centered RF cavities in cooler cells
  - added LiH energy shift before cooler
  - investigated different discrete buncher and rotator configurations
- results are very encouraging

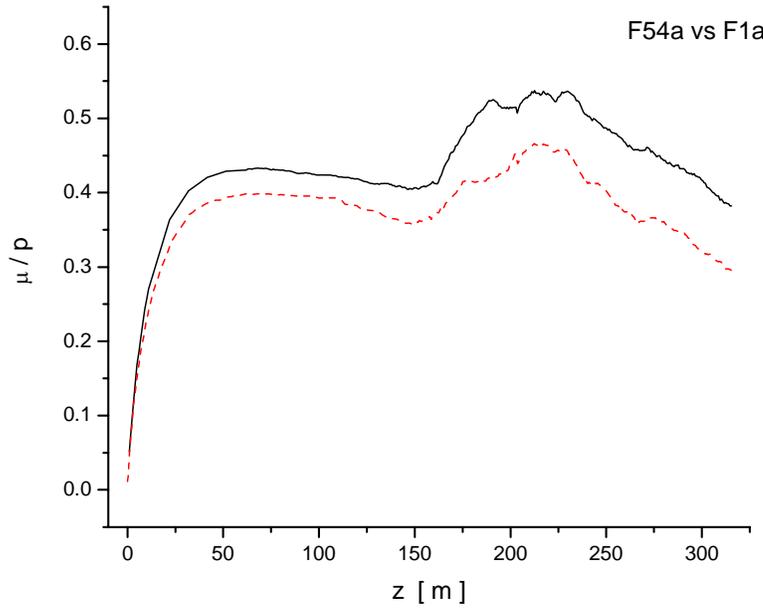
# New buncher configuration



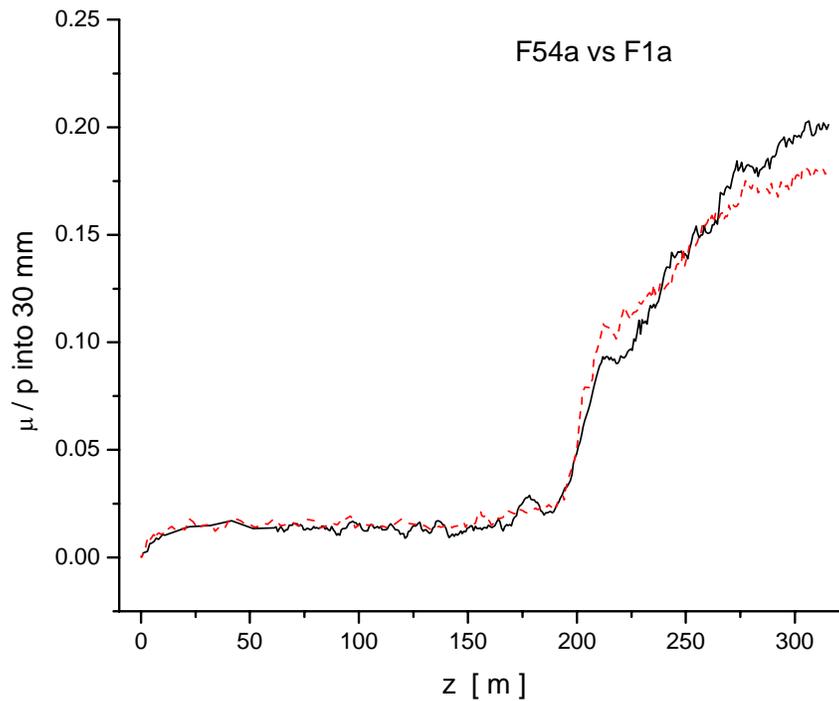
# Transverse emittance



# Total $\mu/p$ with $100 < p < 300$ MeV/c



# $\mu/p$ into 30/150 mm with $100 < p < 300$ MeV/c



## Summary

- shortened cooler length to 80 m
- total length is 295 m (vs. 540 m in FS2)
- get same  $\mu/p$  we claimed in FS2 for each sign

$\mu/p$  into (30,150 mm) accelerator acceptance  
(with same input beam and ICOOL version)

realistic Study 2a	$0.170 \pm 0.004$
baseline Study 2a	$\sim 0.20$
corrected Study 2 (15, 150 mm)	$0.149 \pm 0.007$