Study 2a front end update

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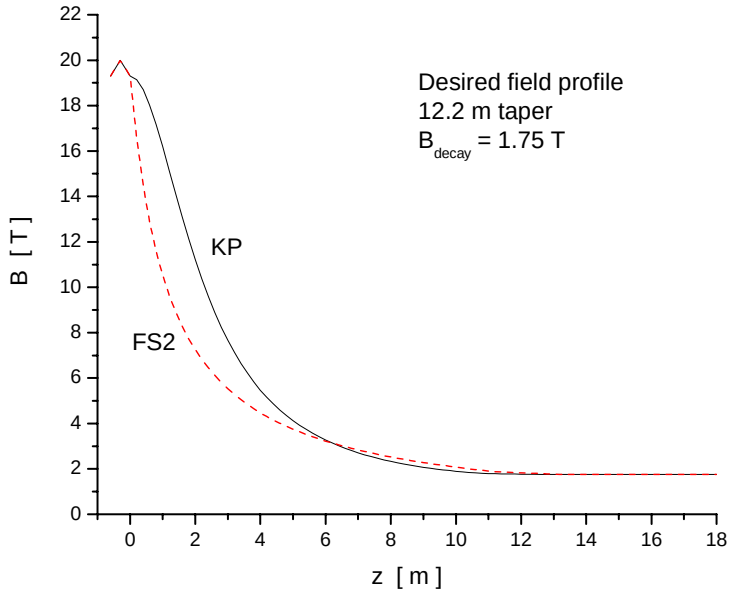
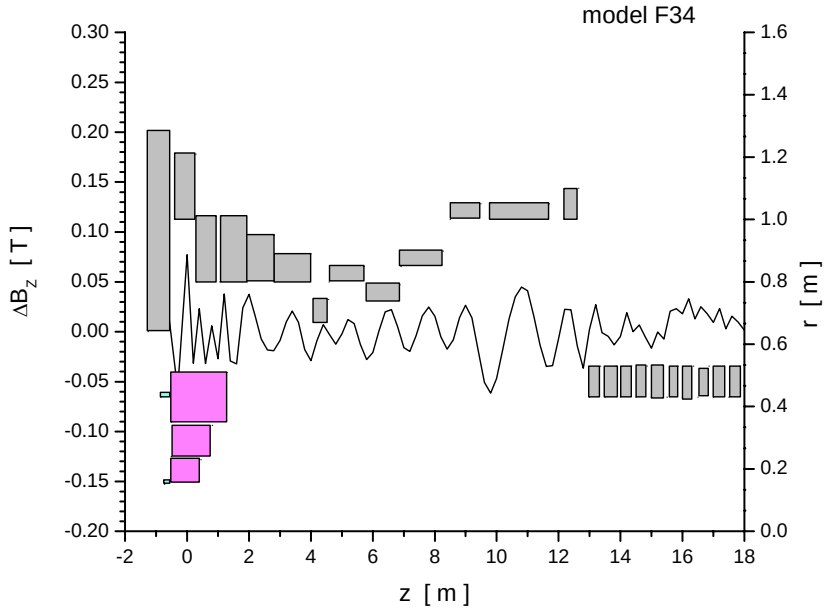
- Mawellian field from table of coils
  - constant fields → periodic solenoids
  - careful matching at transitions
  - collection coils moved radially for extra lifetime
  - optimized collection profile
- radial constraint from tapered beam pipe
- RF windows in buncher
- discrete frequency buncher and rotator cavities
- cooler frequency exactly at 201.25 MHz
- Be coating over LiH absorbers
- new beam distribution with 33 mr crossing angle
- corrected version of ICOOL

Desired collection field profile

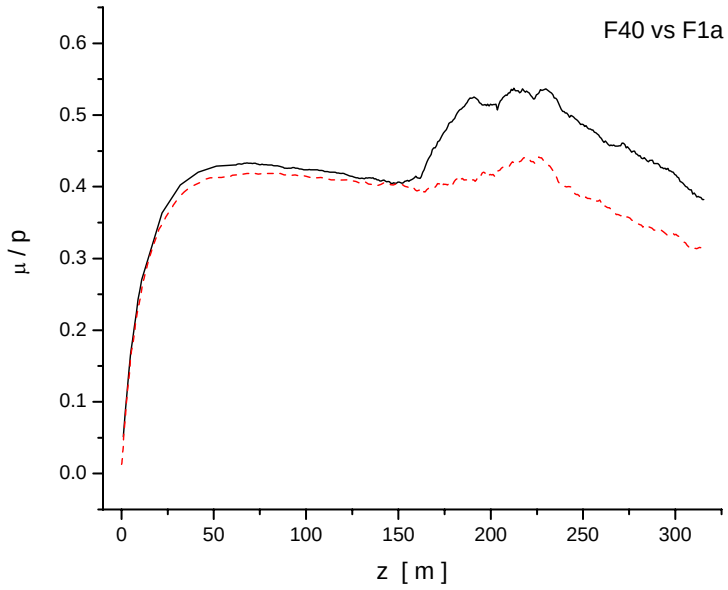


Coil design



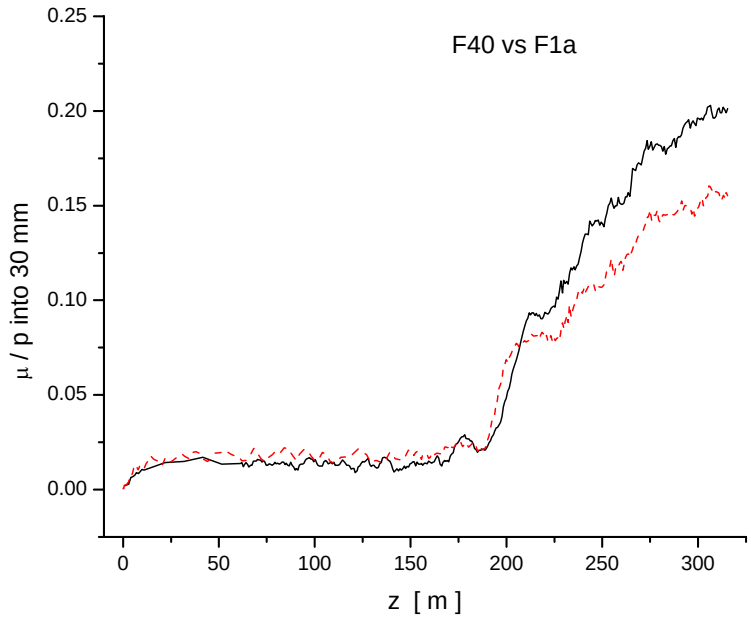
→ +0.019 improvement in μ/p(30/150) over Bob's design
Thanks Kevin!

Total μ/p with 100 < p < 300 MeV/c



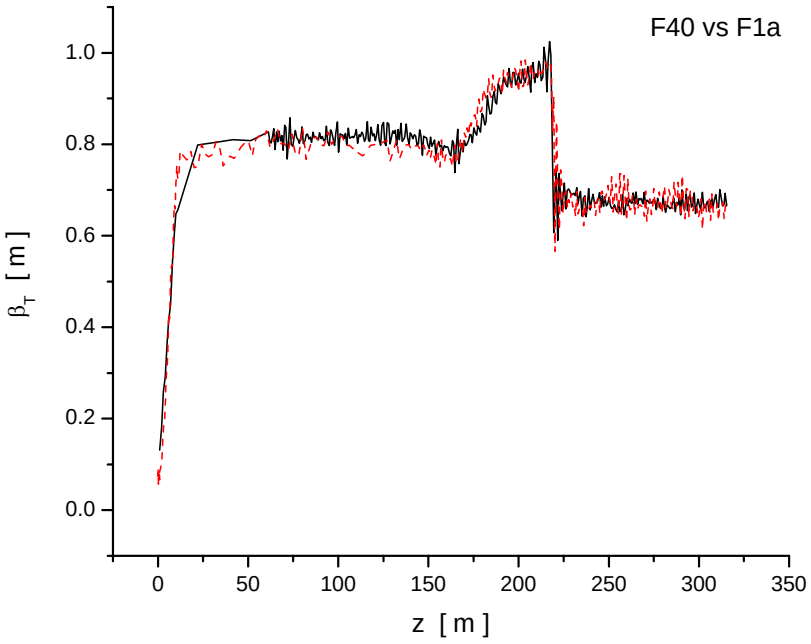
→ ~same through buncher

μ/p into 30/150 mm with 100 < p < 300 MeV/c



→ ~same through rotator

Beta function from rotator to cooler



→ matching seems OK now

Summary: μ/p into accelerator acceptance
with same input beam and latest ICOOL version

realistic Study 2a	0.144 ± 0.007
baseline Study 2a	~0.20
corrected Study 2 (15 mm)	0.149 ± 0.007