

# Guggenheim Update

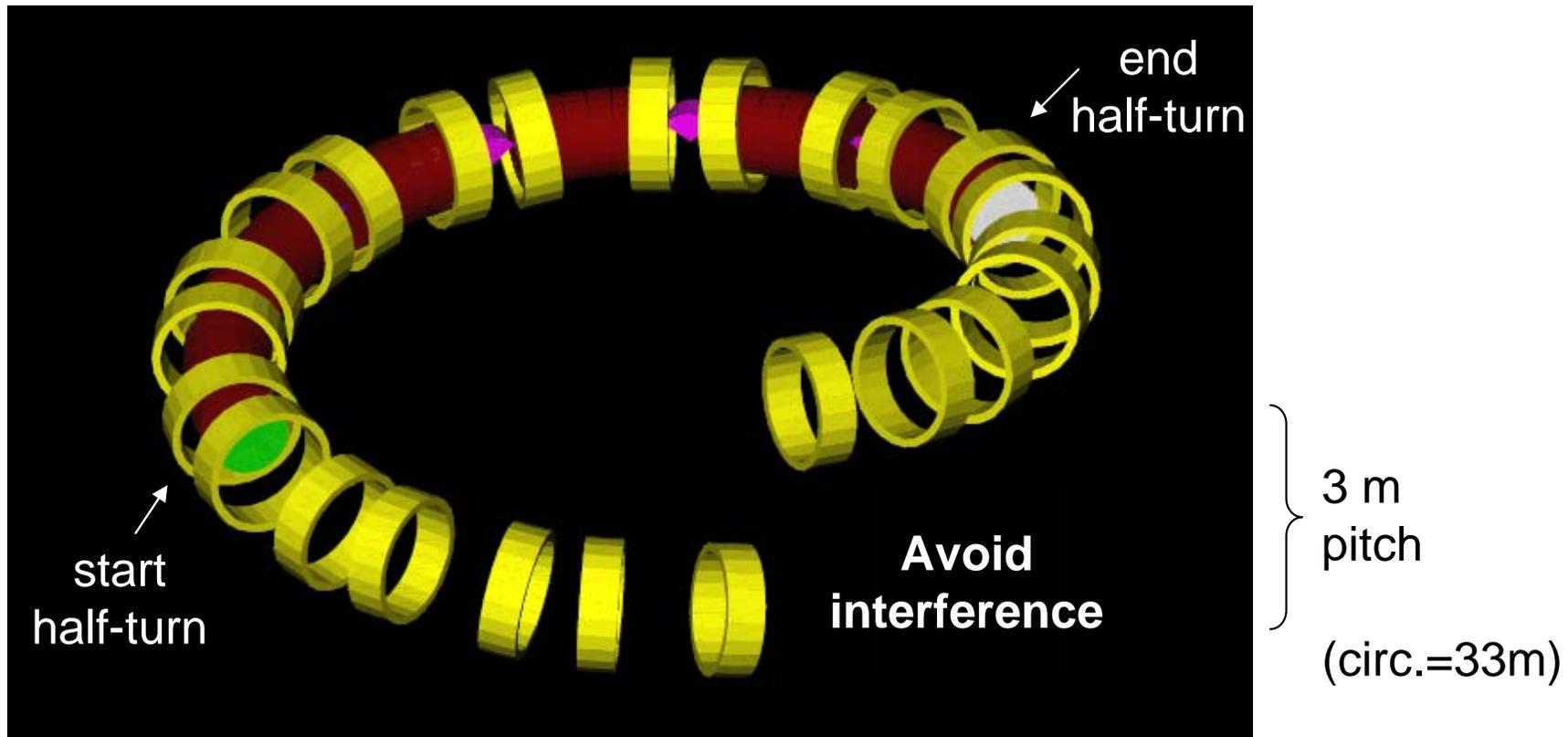
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Feb 8, 2008



# Introduce RF to Guggenheim

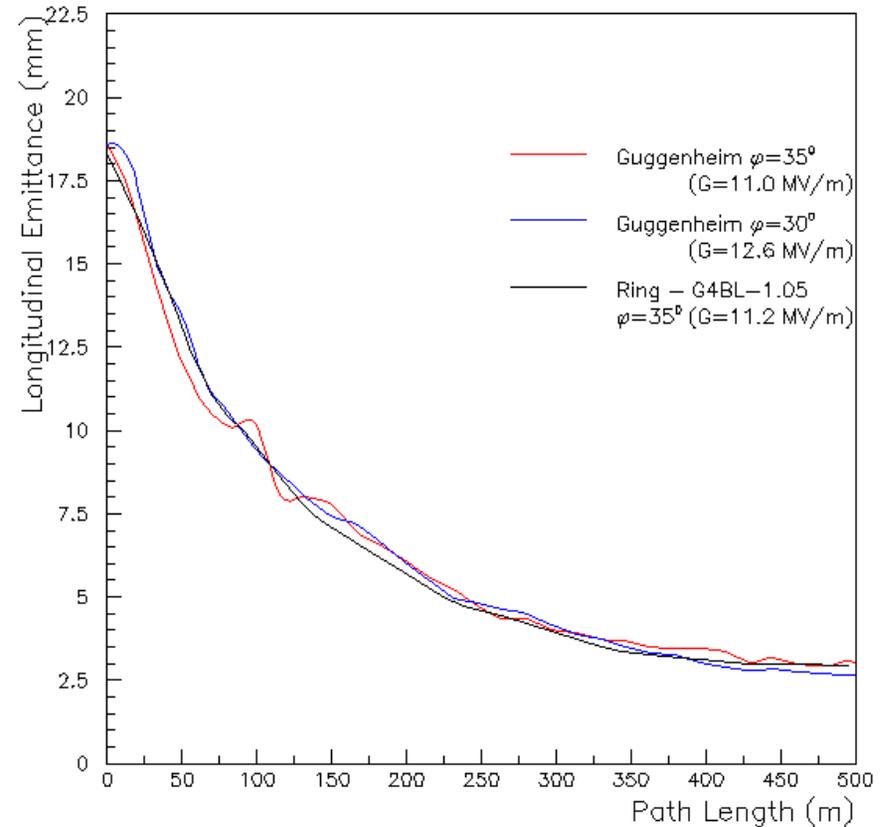
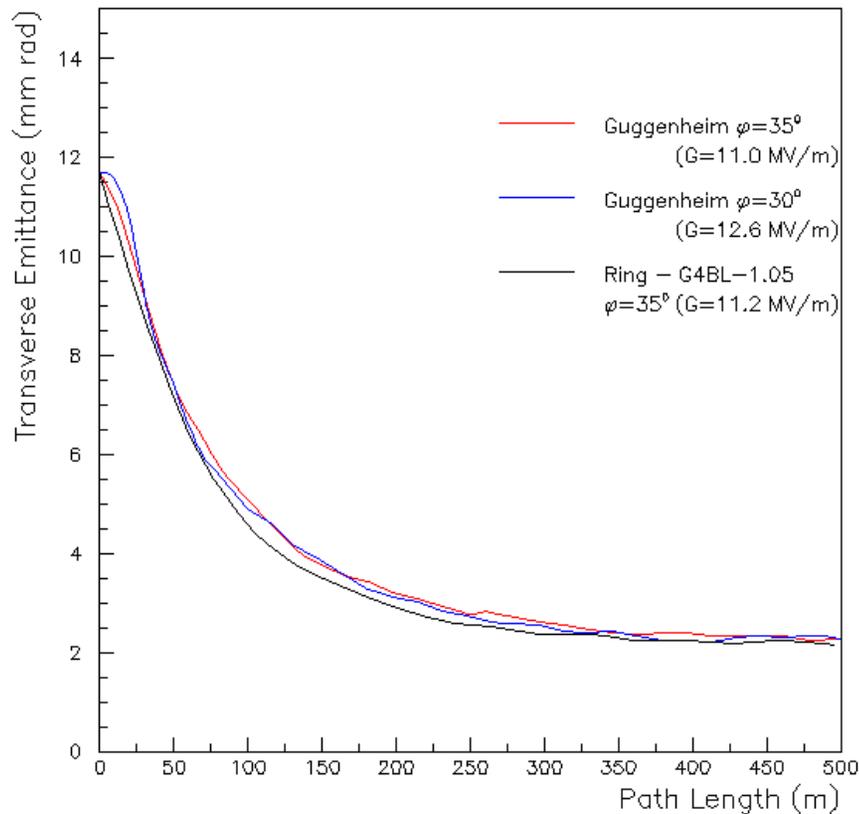
- Simulate a single layer (12 cells), but fill only 6 of them with cavities & absorbers





# Performance (I)

- Beam from R. Fernow (1000 muons used)
  - beam is rotated by helix “slope”

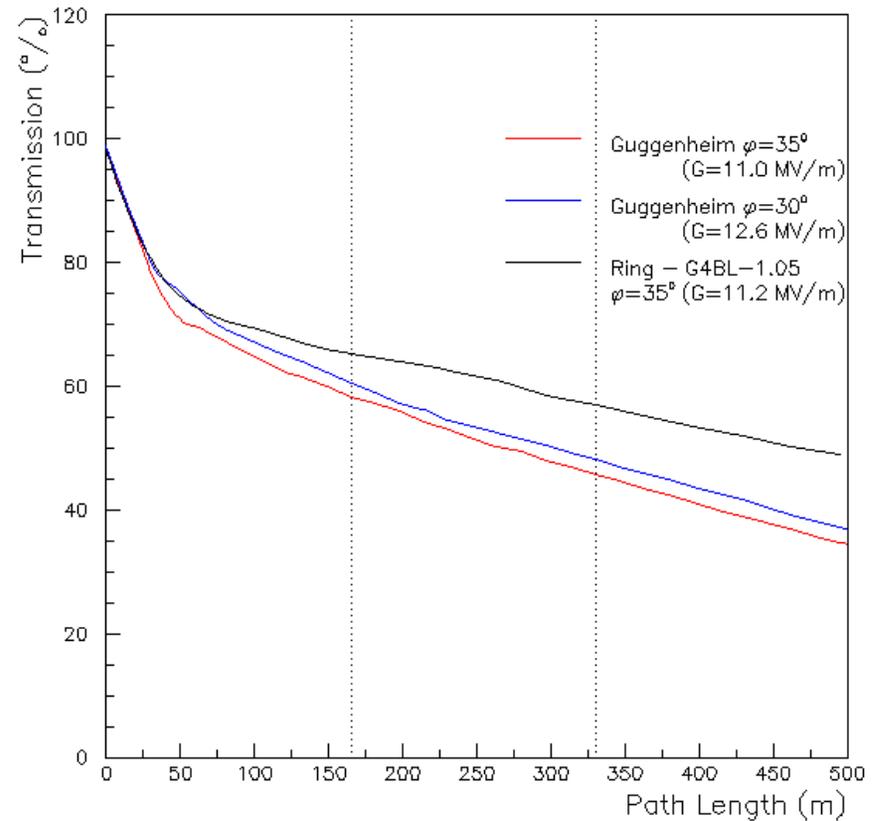
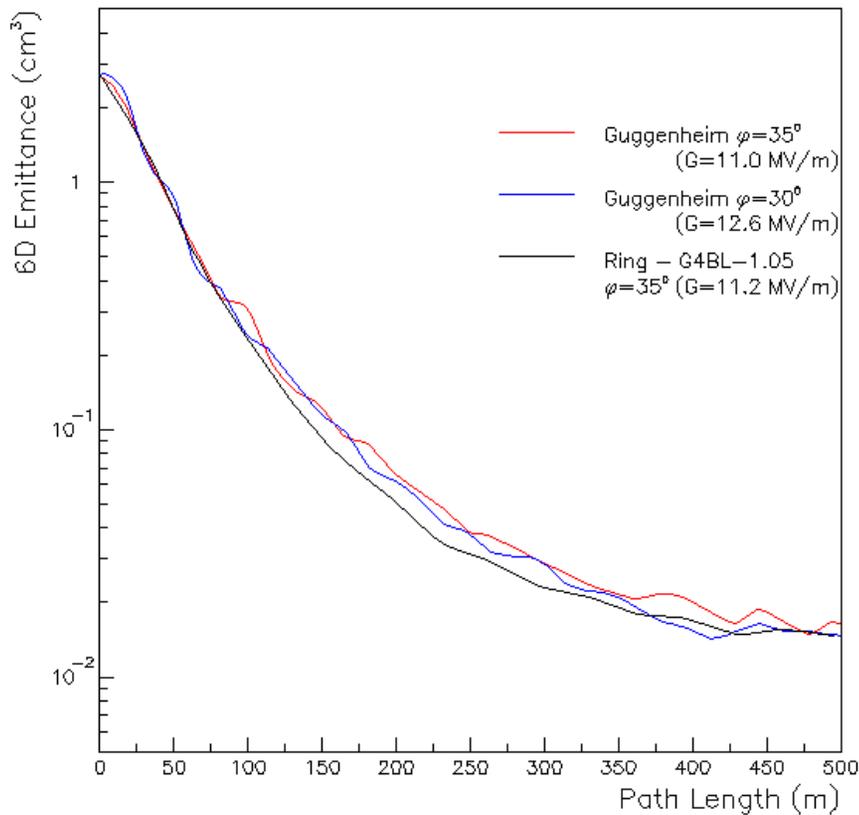




# Performance (II)

transmission falls!

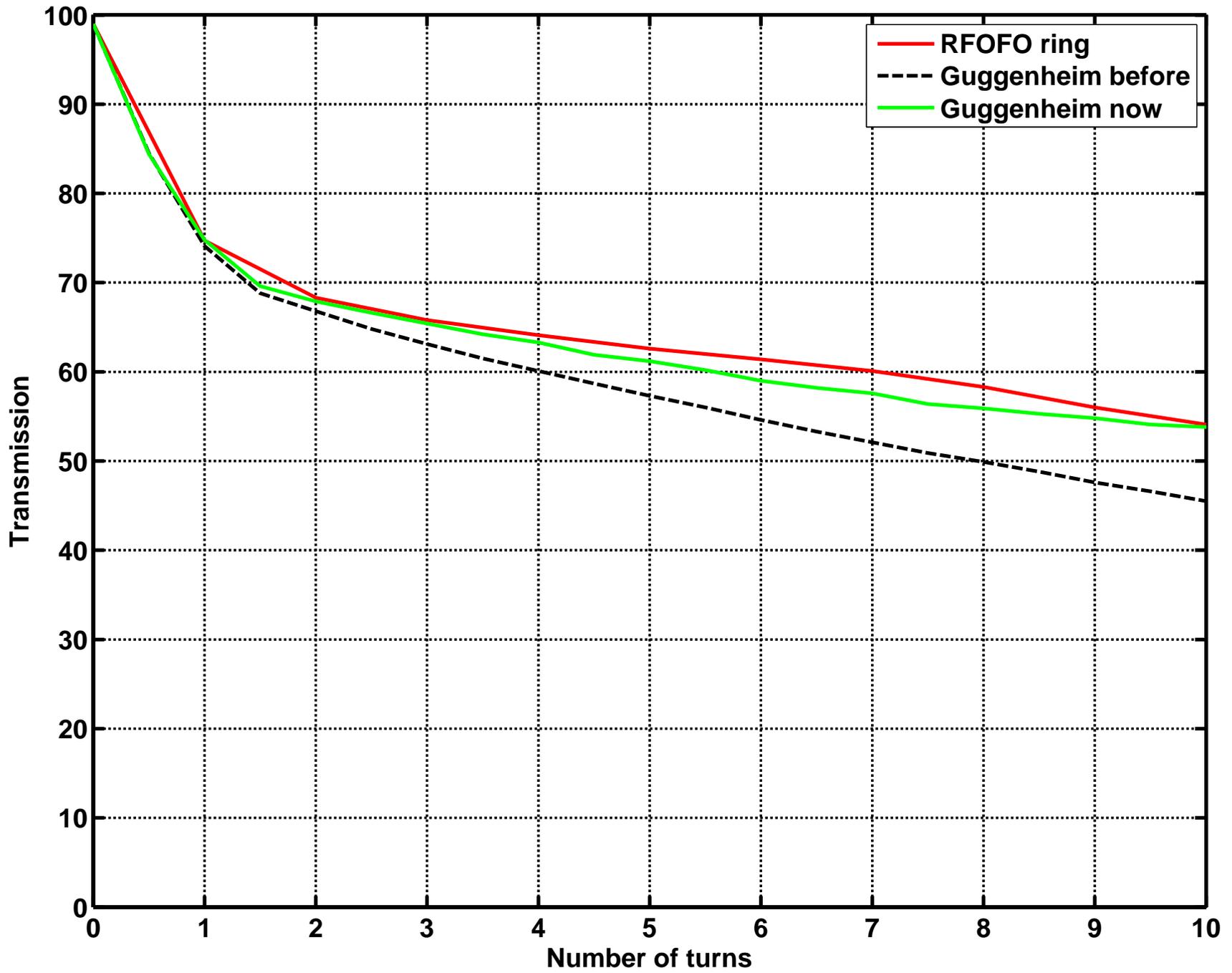
(higher gradient seems a little better)

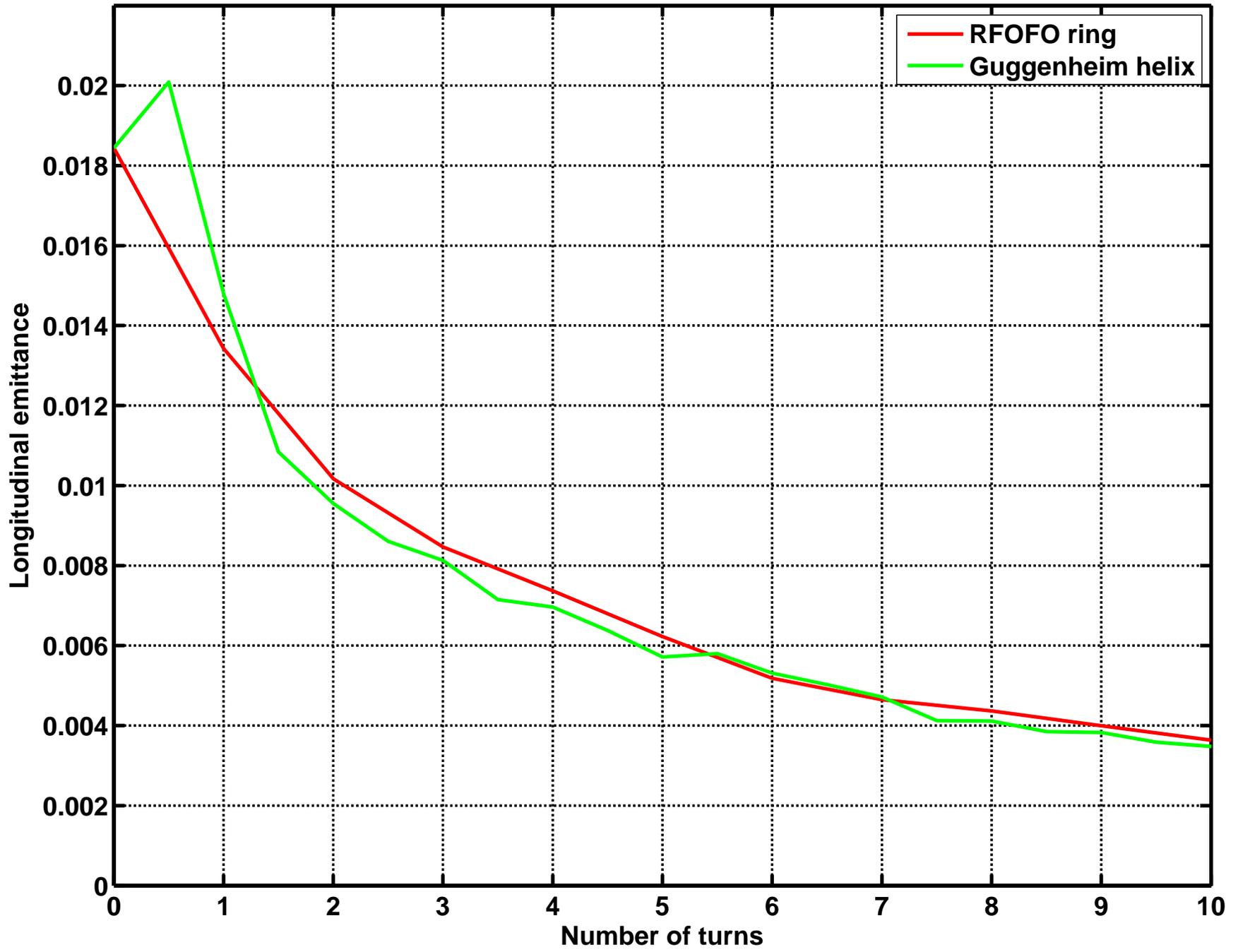


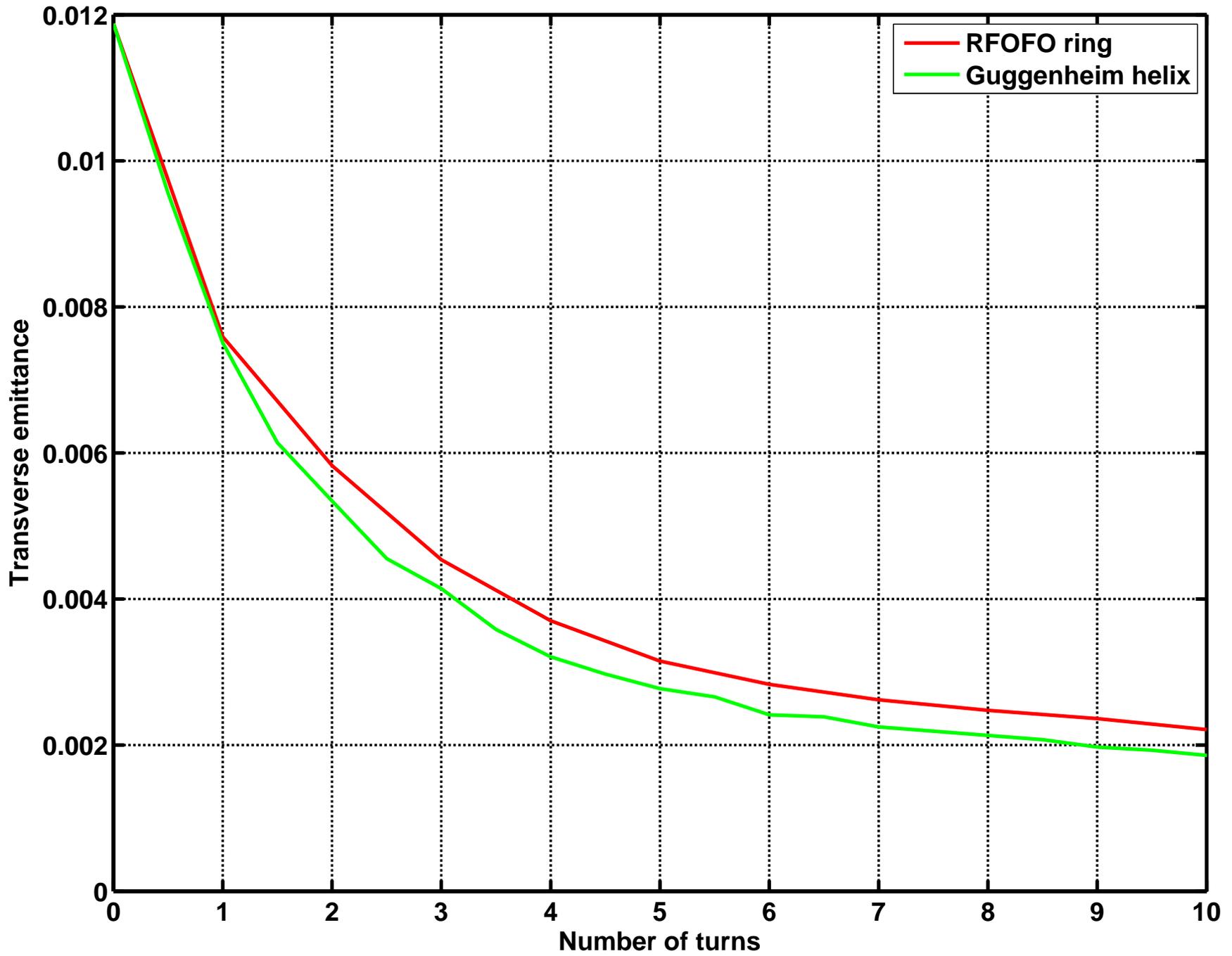


# The future

- Understand (solve!) transmission/matching problem
- Use G4BL simulation to design a complete cooling channel
  - More realistic: include RF & absorber windows
  - Simulate smaller helixes (402, 805 MHz) and match between stages (incl. bunch merging)
  - Design a realistic 805-MHz helix (R.Palmer?)



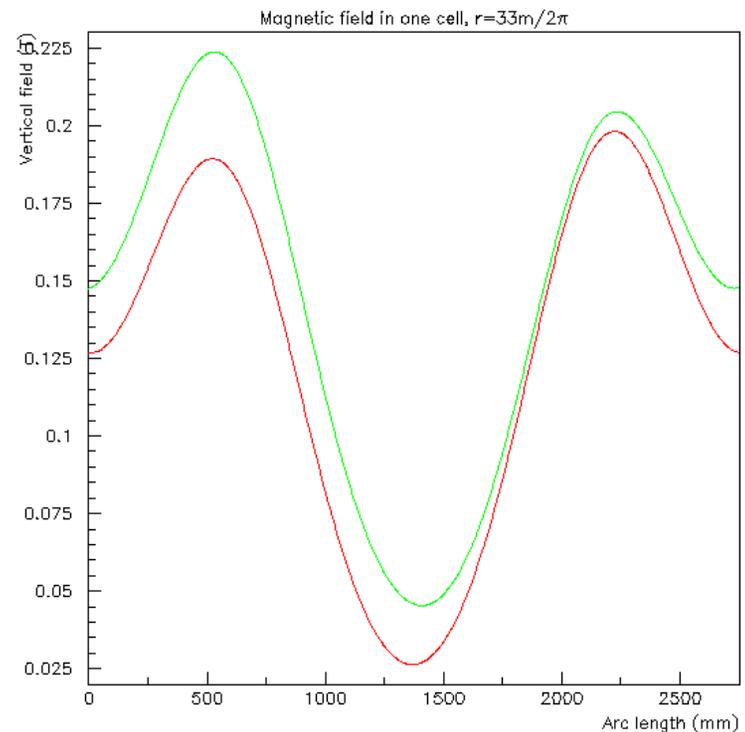
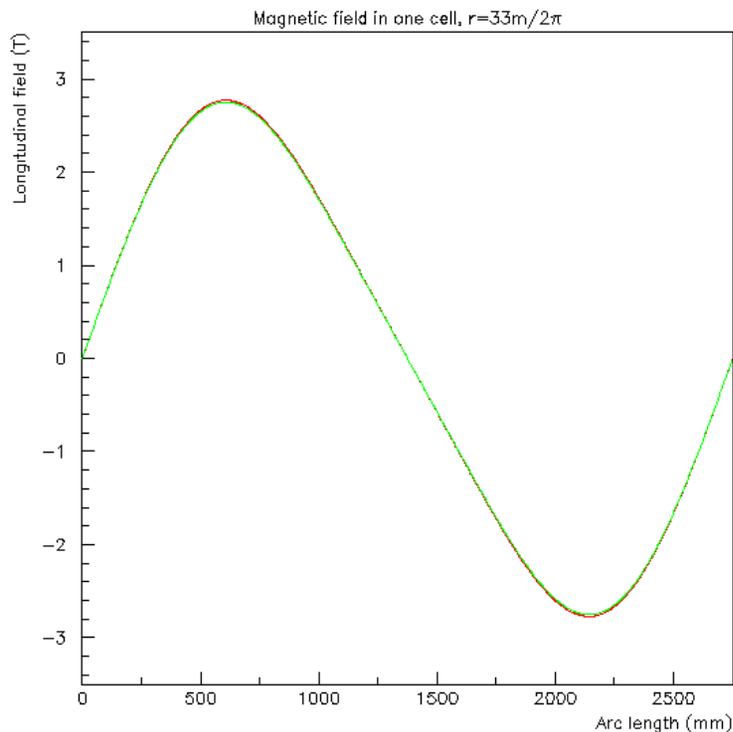


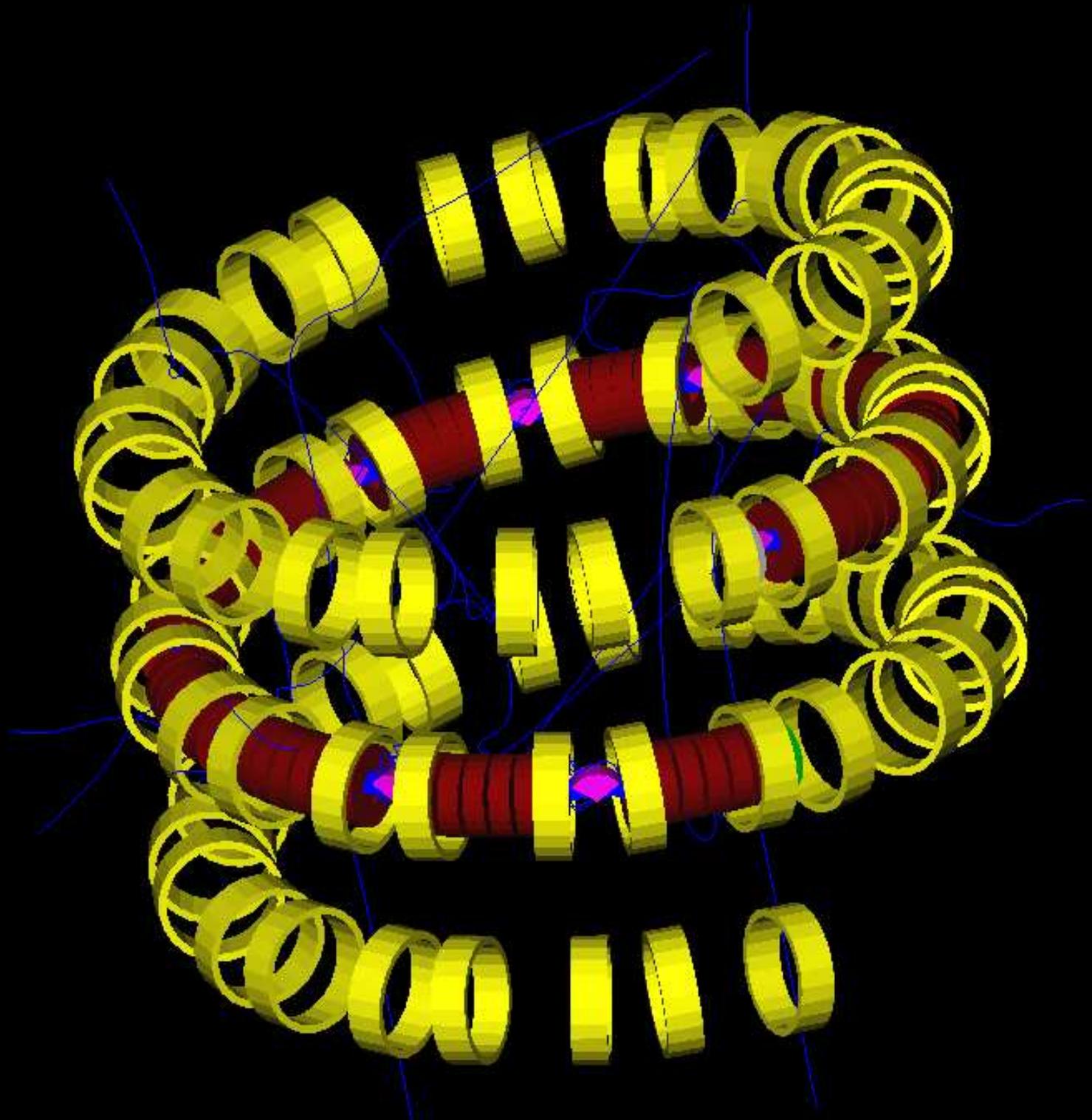




# The effect of “ring stacking”

- 3-m pitch “stack” vs. single layer  
no shielding (impossible to generate in G4BL)





# Summary

- The transmission problem is solved;
- Next step: tune the parameters of the 3-layer model to get as much transmission as possible;
- Next step: implement more realistic elements (absorbers, RF cavities).