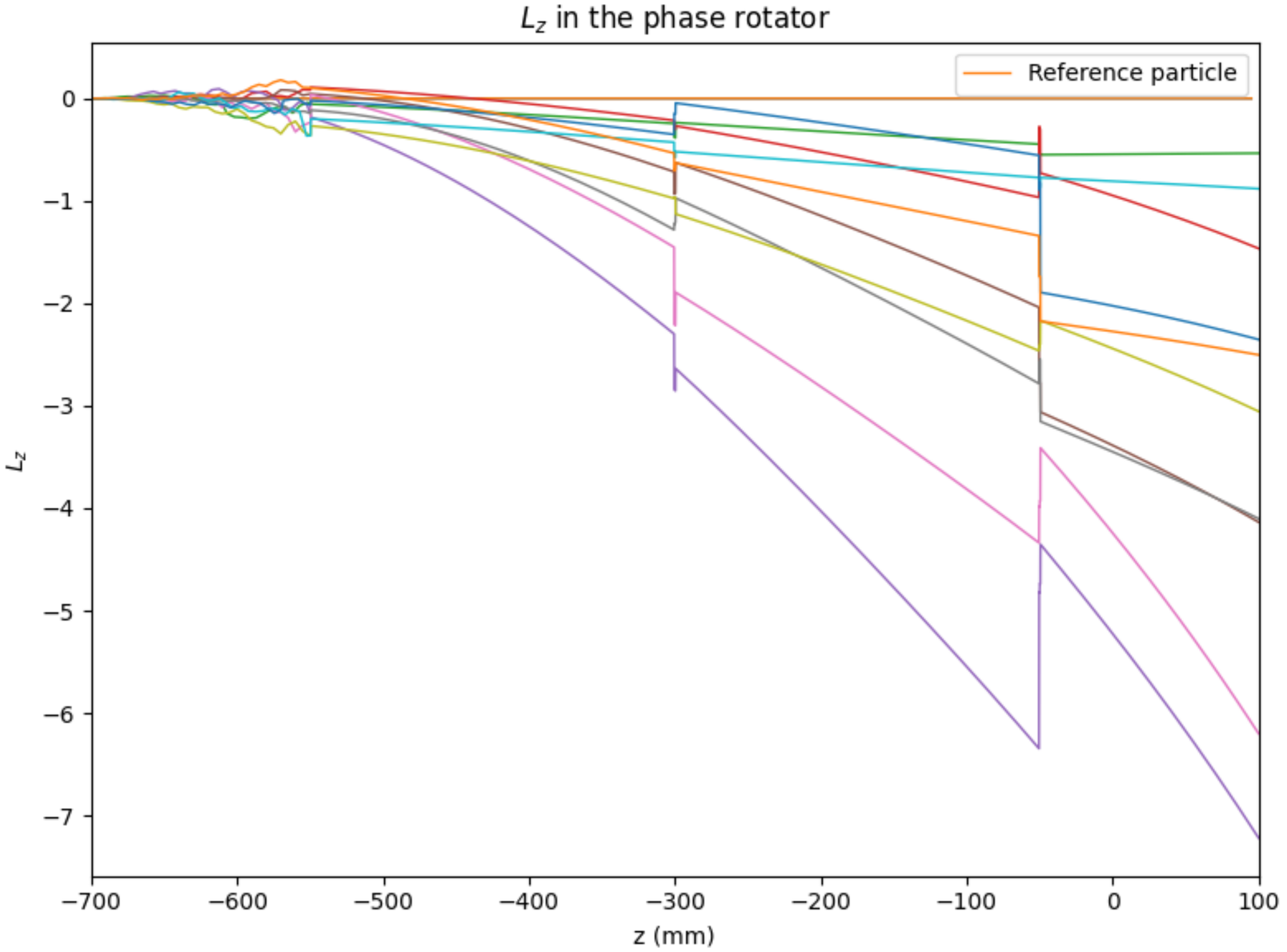
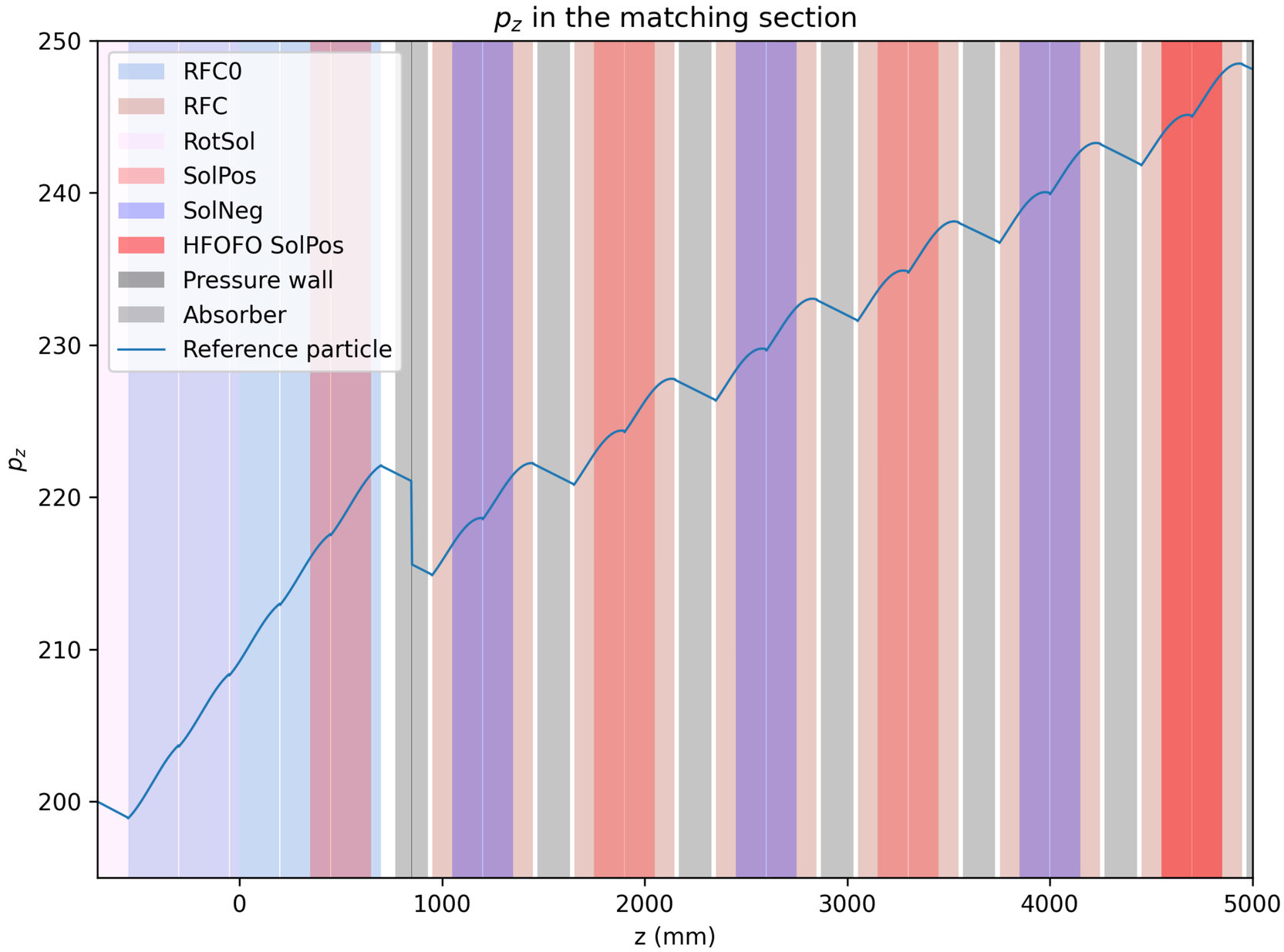
Update

- Since last time:
  - Fixed transverse B-field calculations
  - Systematic uncertainty issues → using detectors instead of trace when necessary, keeping up to 4 sig figs
- Switched to ROOT files for output
- Matching section
  - Studying it isolated was not as simple as I had expected
  - Wrote a different input card that allows for (much faster/easier) scaling of number of HFOFO periods
  - Hardcoded parameters (solenoid currents, wedge absorber widths, RF cavity time offsets) → no discernible periodicity
  - Trying to find set of parameters that results in a steady orbit for p = 200 MeV/c
- Solenoid studies
  - Looked at length
  - Further → combine solenoids of opposite polarity, varying spacing, tilts, and currents

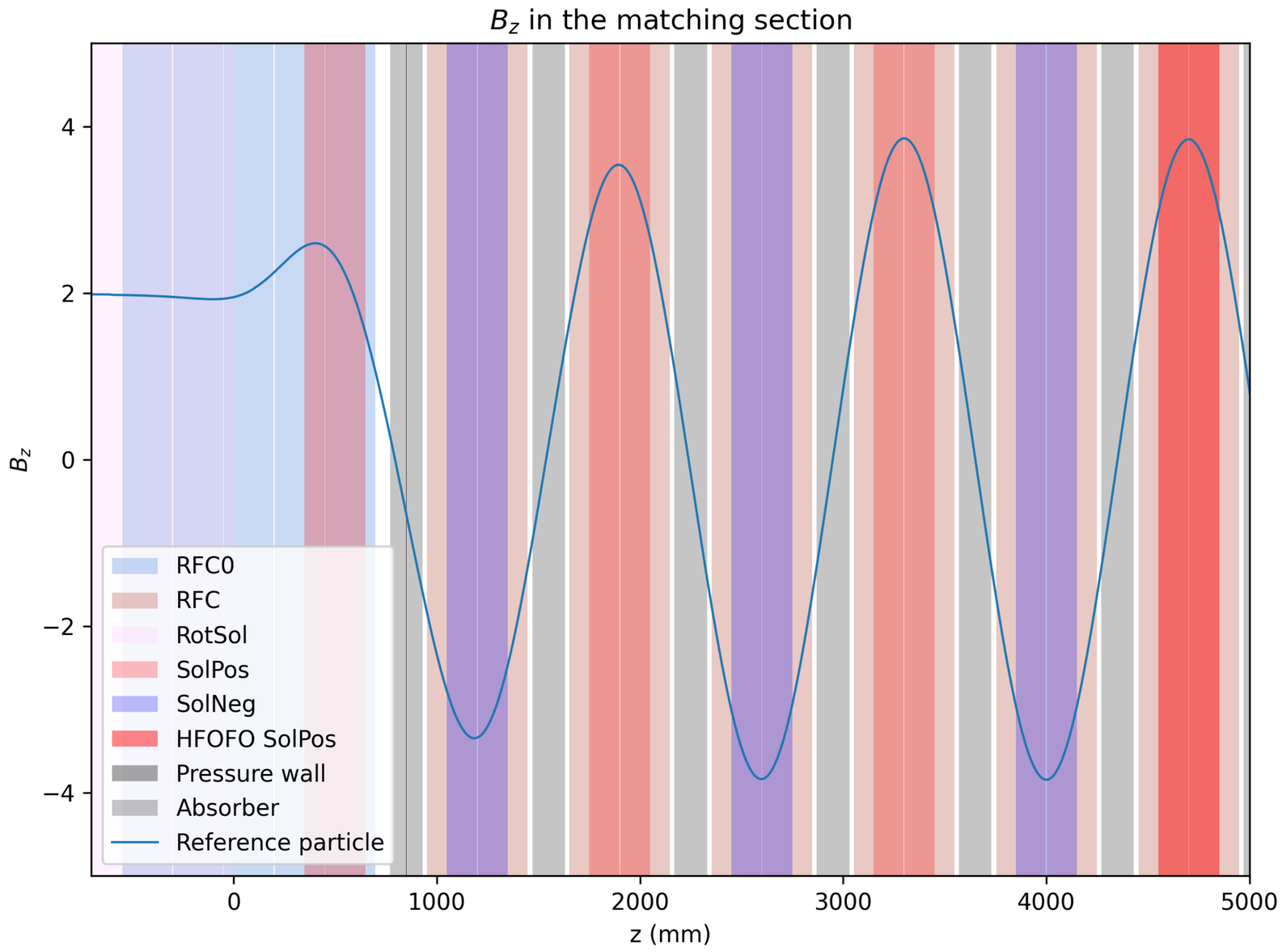
Angular momentum, with RF + terminus



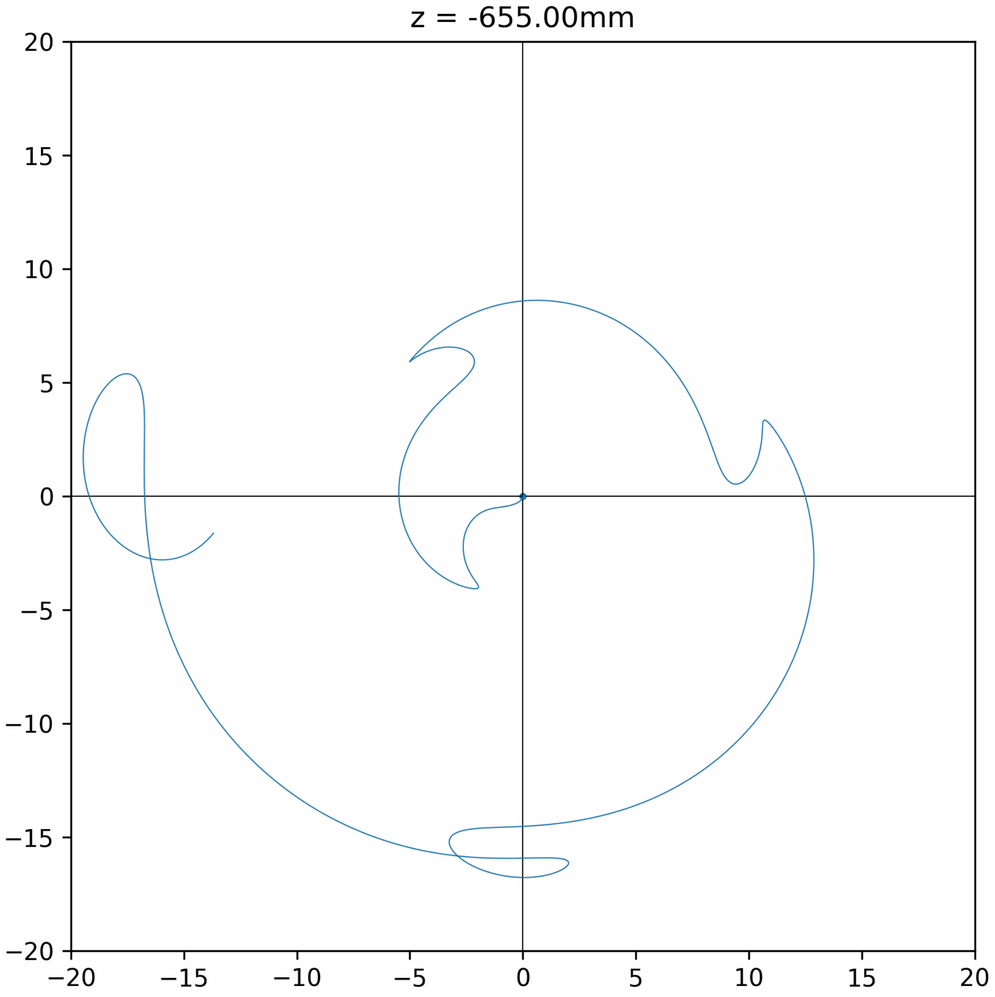
p_z – full matching section



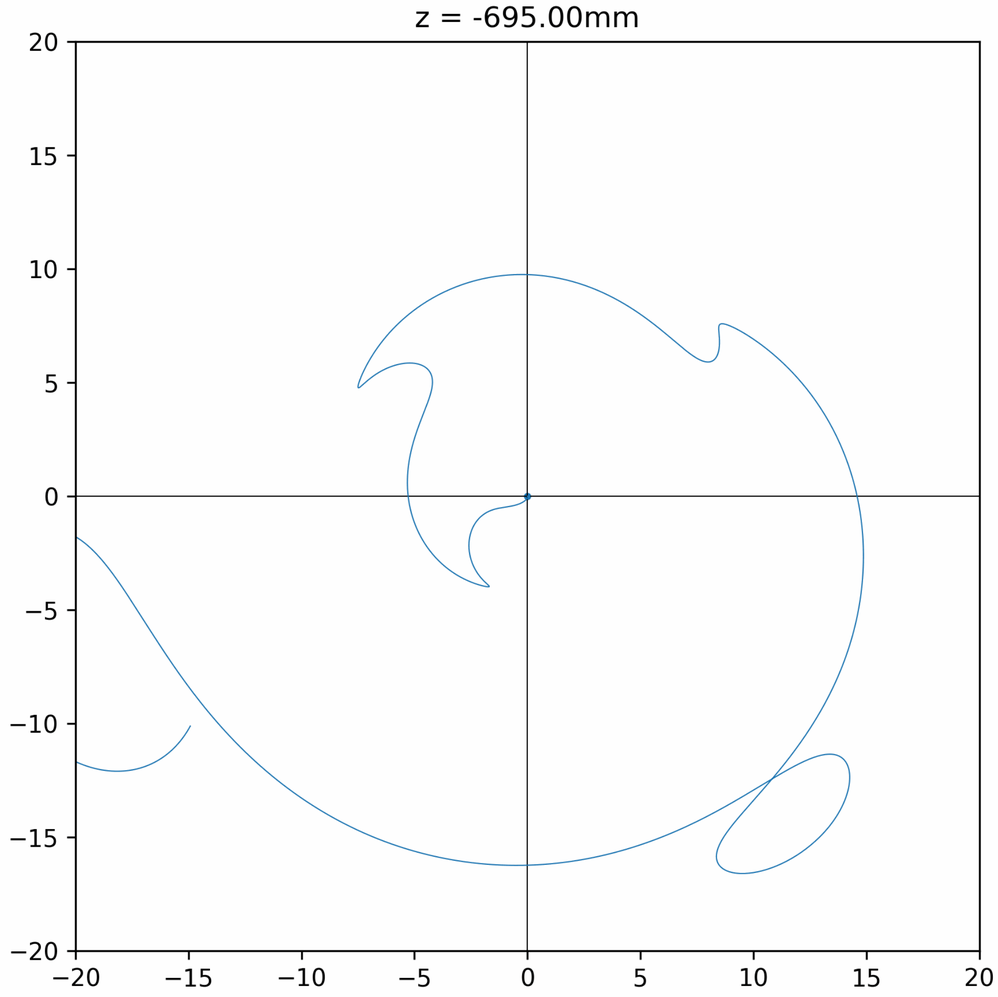
On-axis B-field



Update

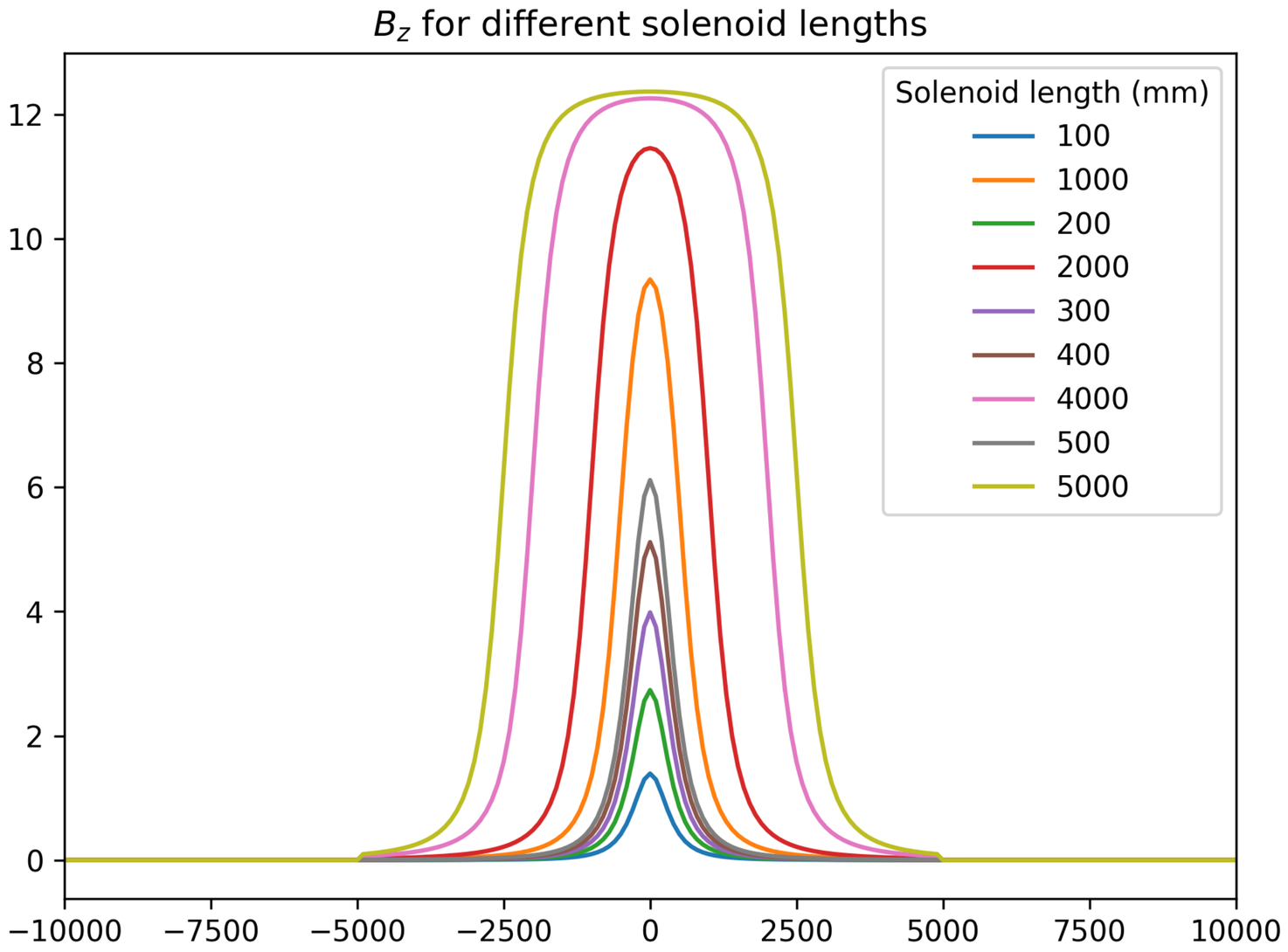


Original currents



Reduced currents

Update


B_z for different solenoid lengths
Solenoid length (mm)
100
1000
200
2000
300
400
4000
500
5000
12
10
8
6
4
2
0
−10000
−7500
−5000
−2500
0
2500
5000
7500
10000