

# Optics in Settings for the next User Run

J.Pasternak, 16/11/2016

# Settings, solenoid mode, 140 MeV/c

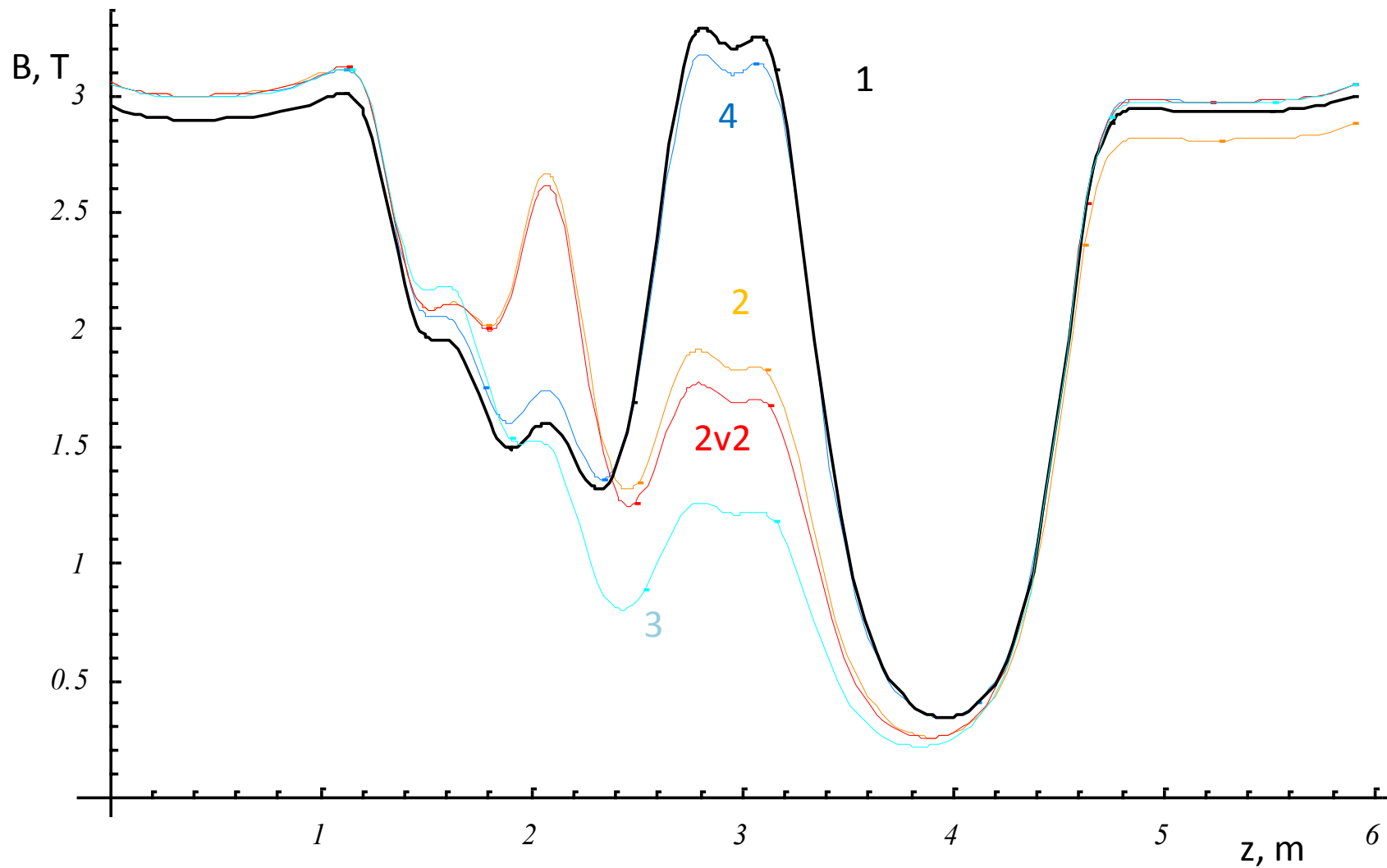
Setting number	E2	CC	E1	M2	M1	FC
2016-04-1.1	198.80	198.80	198.80	170.08	100.01	115.00
2016-04-1.2	205.86	205.86	205.86	170.99	215.81	63.03
2016-04-1.2v2	205.86	205.86	205.86	171.91	211.73	57.93
2016-04-1.3	205.5	205.5	205.5	208.64	102.29	41.52
2016-04-1.4	205.5	205.5	205.5	179.31	113.18	110.66

FC	M2	E1	CC	E2
115.00	0.00	202.55	202.55	202.55
63.03	0	194.5	194.5	194.5
57.93	0	205.86	205.86	205.86
41.52	0	205.5	205.5	205.5
110.66	0	205.5	205.5	205.5

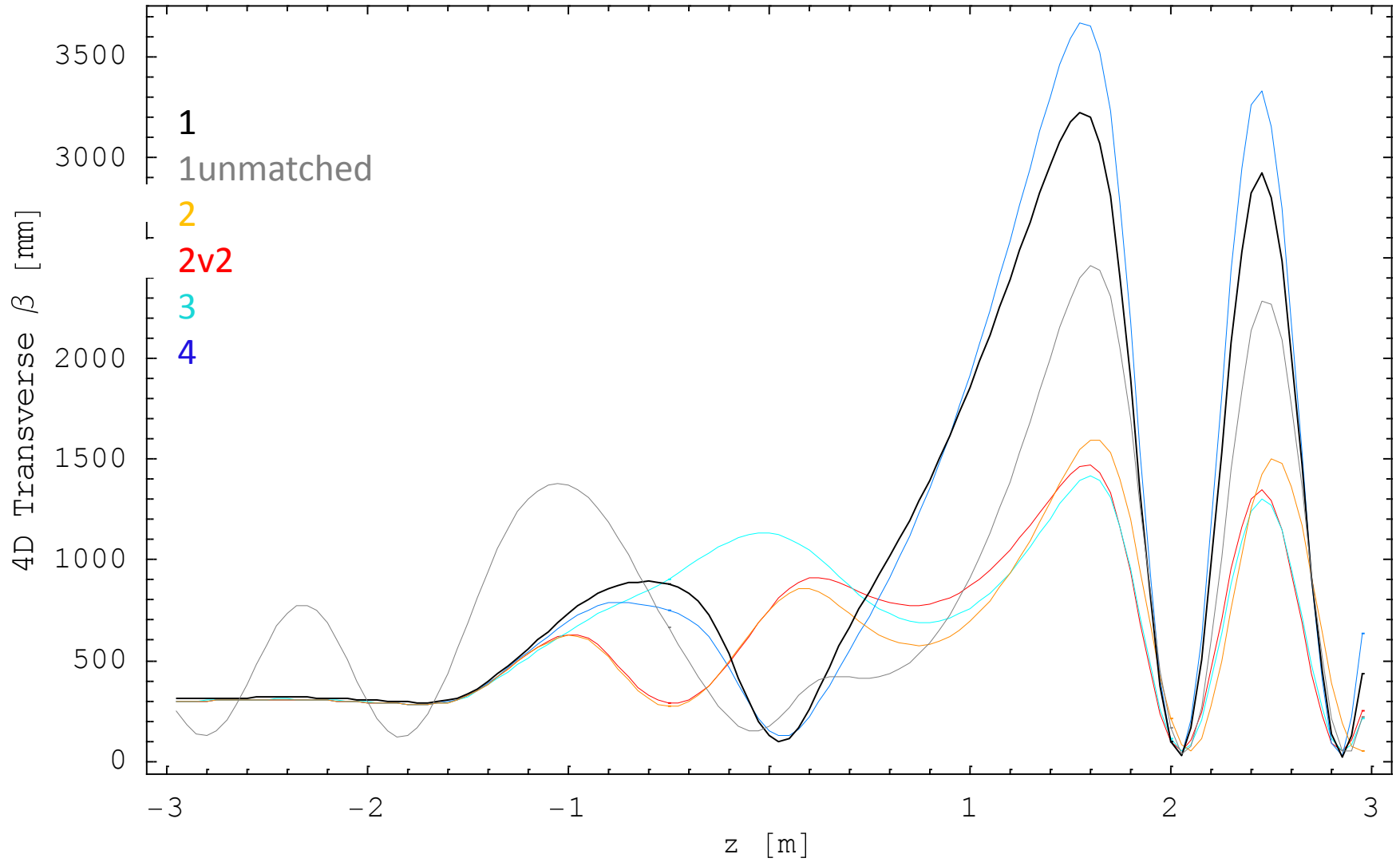
# Comments

- Why 140 MeV/c?
  - Largest cooling effect
  - Largest flexibility in optics tuning within constraints imposed by forces
- Why solenoid mode?
  - Existing experience in combined magnet operations

# B fields



# Optics



# JP's calculation of the force between SSU and FC (no PRY)

- 2016-04-1.1: 140 kN
- 2016-04-1.2 : 144 kN
- 2016-04-1.2 v2: 124 kN
- 2016-04-1.3 : 53 kN
- 2016-04-1.4: 148 kN

# Comments (2)

- 1 and 4 – big similarities
- 2v2 seems to be better than 2
- There should exist a setting between 2v2 and 3 with intermediate beta ( $\sim 1\text{m}$ ) and good transmission -> for a potential beta scan.
- Solution with matched beam may have broader experimental program:
  - Cooling with matched beam (sampled)
  - Heating with realistic beam with good transmission
  - Beam line studies
  - Studies with diffuser