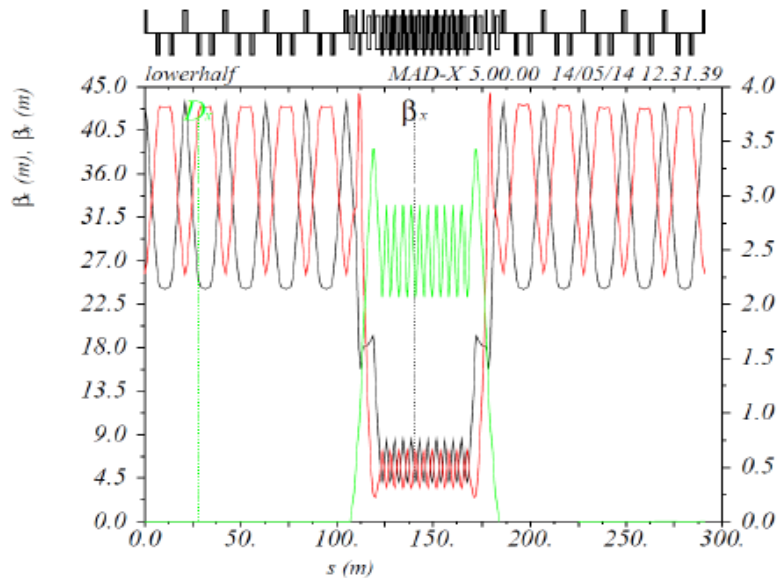


Neutrino Factory Decay Rings – IBS Process

- Adapting 10 GeV IDS-NF Decay Ring to 5 GeV NuMAX ring:
 - Defined muon bunch time structure and phase-space requirements (March 2014):
 - operation with just **one** bunch train of each muon species in the ring
 - Smaller transverse ring acceptance: 20 mm rad
 - First-cut lattices from J. Pasternak and D. Kelliher (presented in May 2014, MAP Spring Mtg):
 - Scaling down lattices in momentum
 - Shortening cells to accommodate new injection scenario
 - Final lattices from J. Pasternak and D. Kelliher (to be presented in Aug. 2014, NuFact'14):
 - Engineering design of the injection system
- nuSTORM lattice design and pion collection horn optimization (Ao Liu, J-B Lagrange) – ongoing

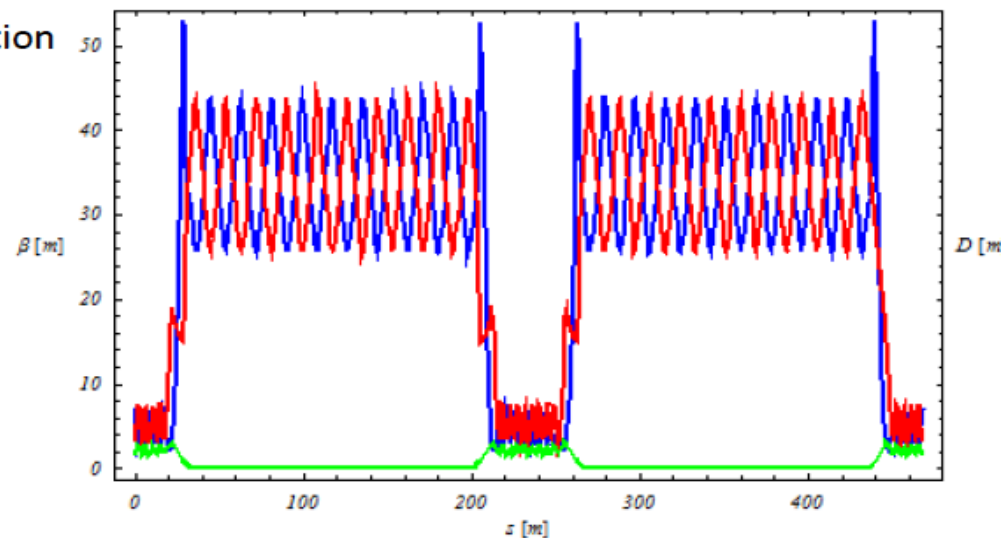
First-cut Lattice Design for NuMAX Decay Ring



- As NuMax design assumes only 1 bunch/charge, the ring size can be reduced.
- We have two preliminary designs of 581.6 and 468.2 m.
- In both rings production straight and matching can be based on room temperature magnets, but arcs need SC ones.
- Injecting directly into the production straight avoids the need for the dedicated insertion (like in the IDS-NF), which allows to make the ring smaller.

Ring with FODO cells in the production section

Ring with FDDF cells in the production section



J. Pasternak
D. Kelliher