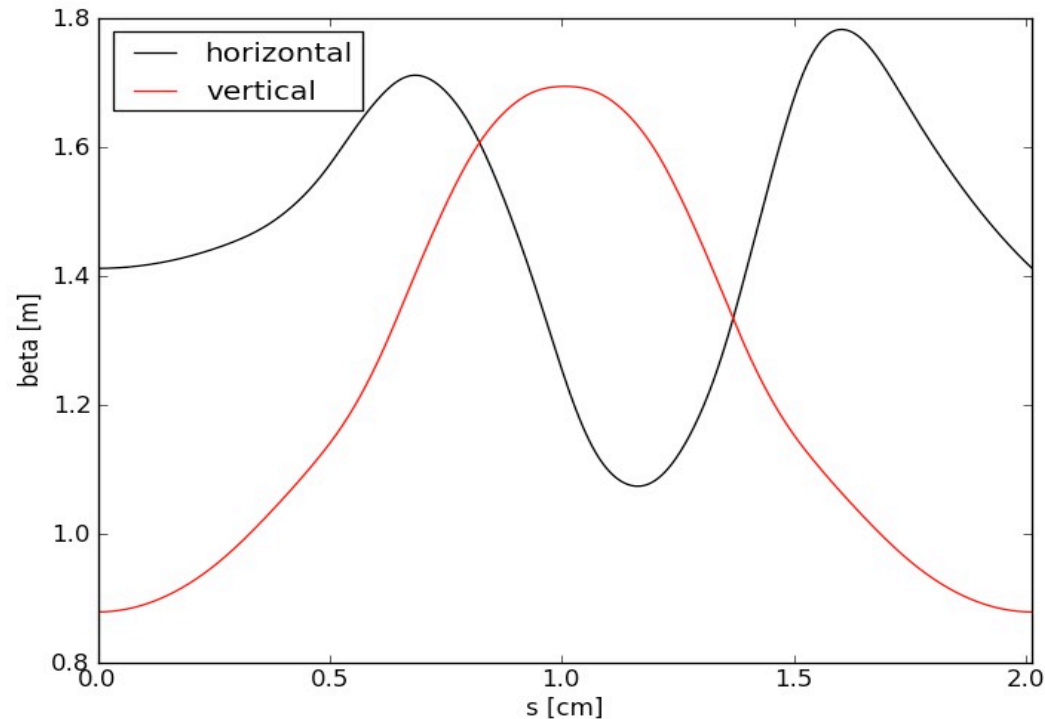


# Zgoubi simulations of ERIT ring

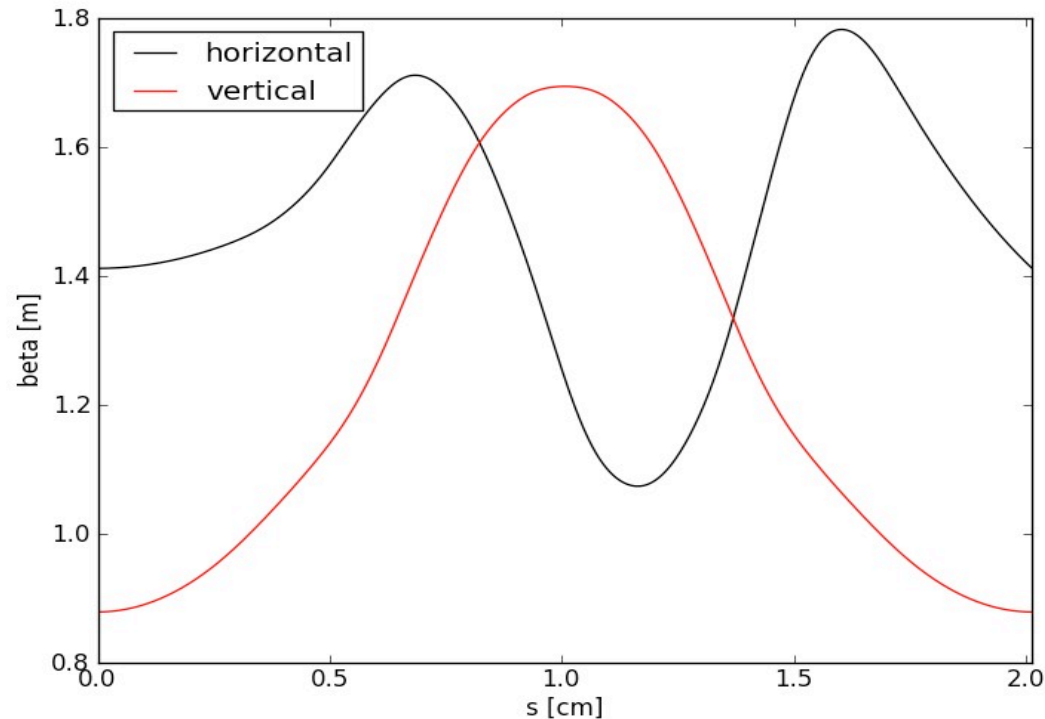
David Kelliher (ASTeC/RAL/STFC)  
15/3/12

# From 16/2/12 meeting



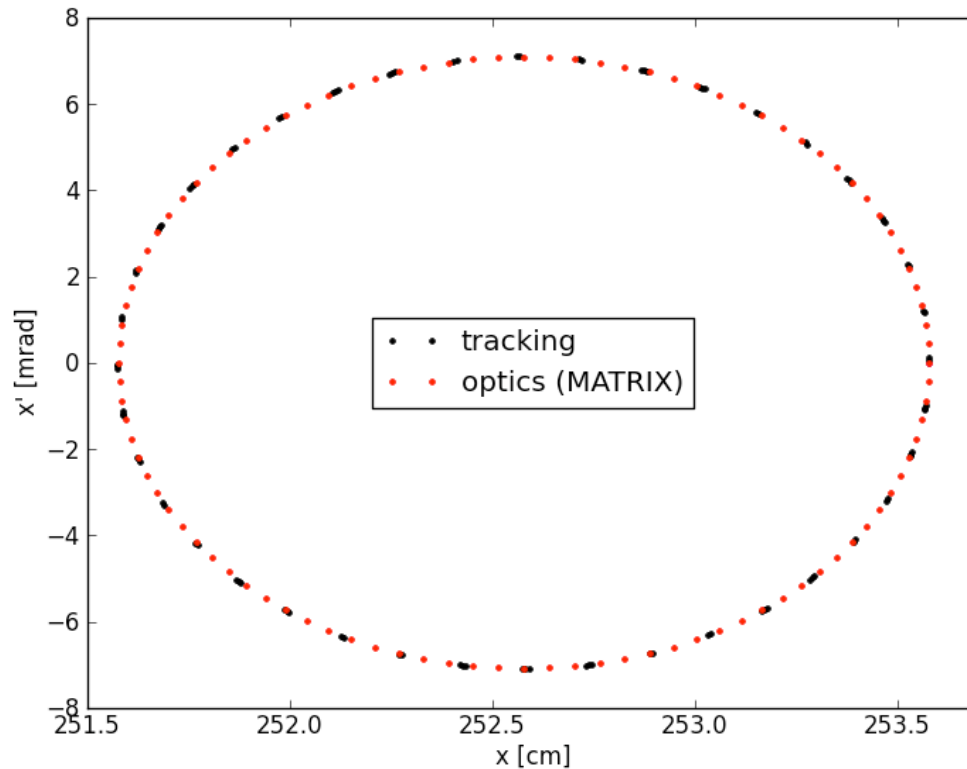
- Problem with horizontal beta profile!
- Zgoubi “MATRIX” module used to calculate tune and beta at either end of cell.
- The transfer matrix was calculated from the tracking results at each value of s (distance along trajectory). (PyZgoubi)
- Beta values then propagated through the cell starting from the initial values calculated by MATRIX. (PyZgoubi)

# From 16/2/12 meeting



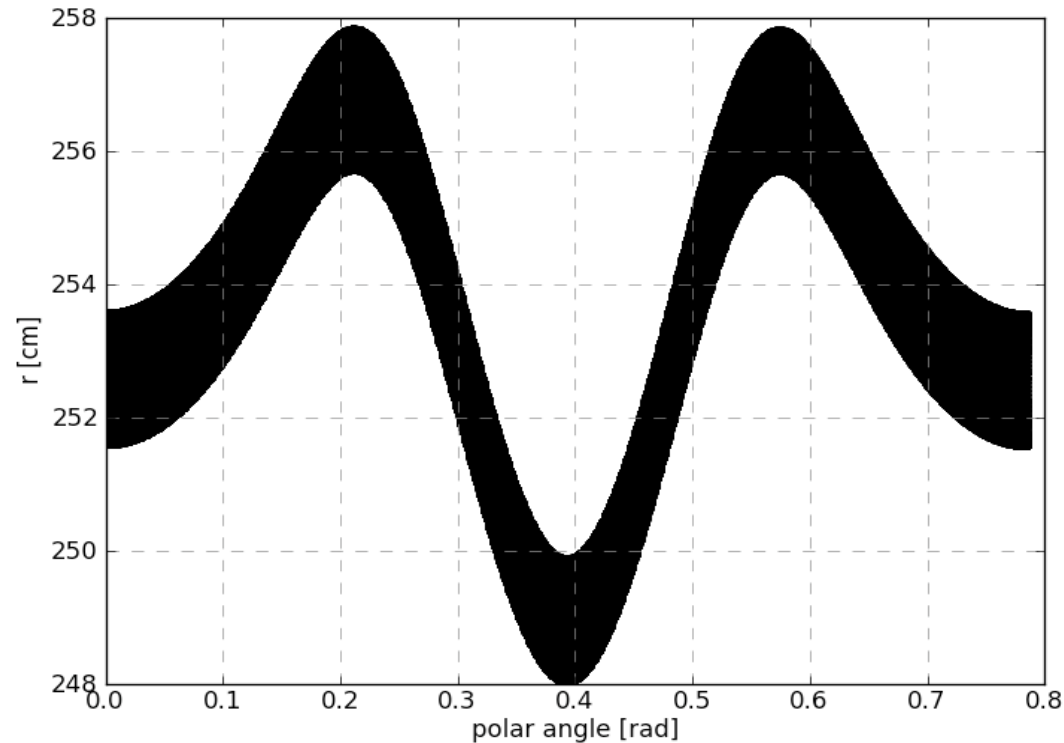
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# Check phase space ellipse



- Check that the phase space ellipse generated by optics agrees with tracking.

# Check beam envelope (at 1cm)



- Horizontal beam envelope is close to symmetrical reflecting symmetry of actual beta profile
- Asymmetry in slide 2 due to error in transfer matrix calculation, e.g. could be due use of “s” coord instead of polar angle. Will hunt down error.

# Future Work

- TOSCA field map – input into Zgoubi, compare results to analytic model.
- Model injection (deal with stripping foil)
- Include space charge in Zgoubi simulation (S. Tygier)