

Emittances required for the electron ring

| | Round Beam (nm) | Flat Beam (nm) | Range (nm) |
|--------|-----------------------|-------------------|---------------|
| 5 GeV | 72 - 92 | 36 - 46 | 36 - 92 |
| 10 GeV | 36 - 42 | 18 - 23 | 18 - 46 |

71 FODO cells of 18 meters each can be used to build the electron ring

| | emittance (nm) | phase x (2*pi) | phase y (2*pi) | Chr x | Chr y |
|--------|-------------------|-------------------|-------------------|--------|-------|
| 5 GeV | 36 | 0.16 | 0.15 | -11.81 | -11.7 |
| | 92 | 0.116 | 0.11 | -8.09 | -8.12 |
| 10 GeV | 18 | 0.41 | 0.15 | -61.9 | -21.9 |
| | 46 | 0.47 | 0.35 | -232.9 | -47.2 |

Chromaticity in the last case is too high.

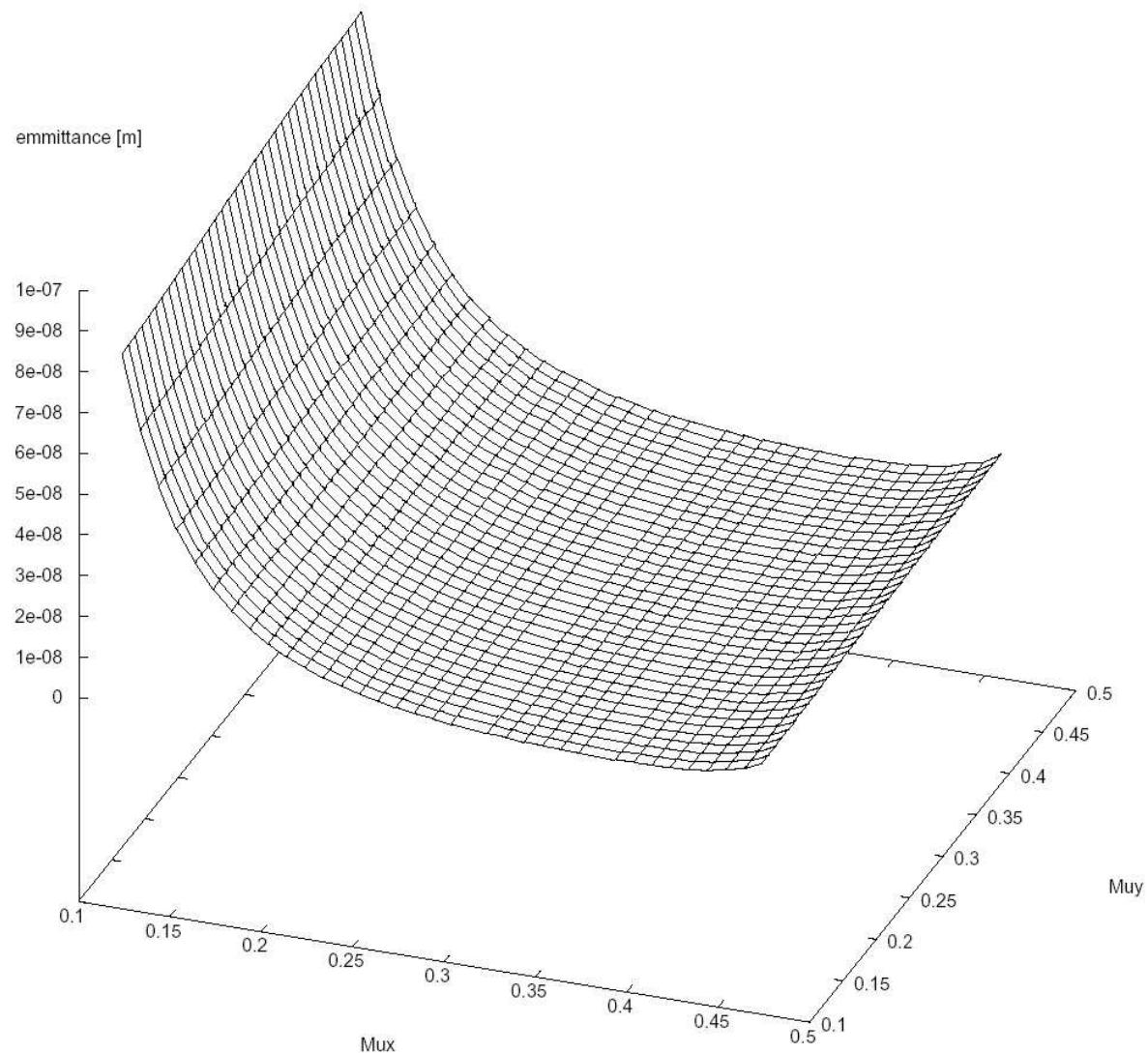
Another possible choice is:

| | | | | | |
|--------|------|------|------|--------|--------|
| 10 GeV | 52.6 | 0.23 | 0.23 | -19.69 | -19.69 |
|--------|------|------|------|--------|--------|

Syn. Rad Power/m (KW) 2.5 KW/m

Emittance Vs Phase Advance (5 GeV)

'emittance3_5GeV.dat' —



Emittance Vs Phase Advance (10 GeV)

'emittance4_10GeV.dat' —

