Summary report from WG1
P. Raimondi

R&D plane

Time Scale

Strategy

Assignments

- IP parameters optimization:

  Giorgi: relaxed parameters from detector:

  energy_spread: 10MeVcm ok =>

  energy_spread per beam 1.4 10-3

  Betagamma 0.2 (0.3) with pipe radius 10mm (15mm)

  Angular clearance 100mrad

- IP parameters optimization:

  Find a set of IP parameters (betas emittances etc…) compatible with single bunch extraction from the DR (Biagini)

  Betagamma optimized for the transport of the spent beam

  RF around 500MHz

  Power consuption huge >500MW with present parameters, limit power consuption to 100MW

- Decrease ring energy and accelerate before colliding and decelerate after, additional benefit: energy spread decrease with acceleration
- Increase damping time, decrease disruption
- Trade longitudinal damping vs transverse

Optimize two rings per beam solution

Unless we find a set of parameters that works with low current (<2Amps) and little emittance blow-up (<5) we have to go through acceleration/deceleration

- Decrease ring energy and accelerate before colliding and decelerate after, additional benefit: energy spread decrease with acceleration
- Increase damping time, decrease disruption
- Trade longitudinal damping vs transverse

Optimize two rings per beam solution

Unless we find a set of parameters that works with low current (<2Amps) and little emittance blow-up (<5) we have to go through acceleration/deceleration

To dolist:

IP Parameters optimization (Biagini)

Strawman design:

  Most appealing scheme with acc/dec (Seemann)

Ring desing and optimization (Cai, Wolsky)

IR and FF (Sullivan)

Gun, charge,emittance

Positron source (needs lifetimes)

Cost and power estimates