IDS Improvement: New Storage Ring

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The Issue

- Storage ring is long

- Leads to a large depth

- Unnecessary for 25 GeV

- Make ring designed specifically for 25 GeV

- Achieve $0.1/\gamma$ divergence

Storage Ring Circumference

○ Assumed to be 1.6 km

  ❑ Twice proton driver circumference
  ❑ Made sure each bunch injected into a bucket

○ Can have shorter circumference

  ❑ Long delays between bunch extractions

○ No constraints with one proton driver bunch!

Storage Ring Circumference Example

- Storage ring 5/4 proton driver circumference
- Proton bunch 0 turn 0 to storage ring bunch 0 turn 0
- Proton bunch 2 turn 6 to storage ring bunch 1 turn 5
- Proton bunch 1 turn 13 to storage ring bunch 2 turn 10
- Bunches all within less than 40 μs