

Input to Himel 01, Himel 02, Himel 09, Himel 10

PT

WG1

21-Aug-2005

Note: The judgments in this presentation are solely those of the author and do not represent a consensus of WG1.

01 -- Parameters

- Bunch lengths below 300 um require a 2-stage BC
- Parameters with shorter bunches typically have tighter emittance growth figures
 - Opposite of what is likely in reality – shorter bunch lengths will lead to larger emittances
 - Doesn't mean we can't hit the short-bunch tolerances
- Studies of emittance preservation nowhere near mature enough to confidently state that we can hit targets in the parameter table
 - Can have these by end 2006 with concentrated effort
 - Requires considerable planning effort in near term and **commitment** of people and resources from the collaboration
- What do the targets in parameter table mean?
 - 50% confidence? 90% confidence?

02 – Gradient and Upgrade Path

- Higher-energy beam more stable against emittance degradation than lower-energy
 - Higher-energy can have weaker quad lattice
 - Higher-energy can tolerate stronger wakefields
- Our preference would be to ***not*** perform upgrade by extending backwards
 - Linac optimized for low energy becomes high-energy linac
 - Use of LL/RE cavities for upgrade illogical in backwards-extension program
 - Would it be possible to extend the *tunnel* back, *move* the LE linac into extended tunnel, fill HE linac with new lattice and cavities?

09 – DR location

- Optimal configuration: extract beam from DR moving upstream wrt linac, turn around and inject into BC
 - Allows feedforward from DR
 - Additional margin on extraction stability (maybe)
- Other than that, not sure we have a dog in this fight



10 – Cavity Geometry

- Preliminary indications: stronger wakes of LL/RE cavities tolerable
 - Need more thorough examination
 - Can be done 1st Q CY 2006, modulo getting good wake functions for simulation use
- Can reduce risk by considering beam-based alignment contingency
 - Read out HOMs in first 10%-ish of cavities
 - Movers on first 10%-ish of modules
 - Might need these for TTC cavities if 300 um alignment tolerances in CM can't be met