

Discussion on "Medium β SC-Structures" by Jean Delayen

In the discussion Jean's plan to propose common definitions for the most relevant cavity parameters was discussed and encouraged. The proposal does not aim at establishing the same definition to be used by all projects or groups. It is aimed at establishing common (additional) parameter calculations that allow to directly compare designs by different groups.

The main point that needs a common basis for comparison is the definition of active length in a cavity. Jean will put everything on the basis of $n \cdot \beta \lambda / 2$, where n is the number of cells. This was only disputed by one comment that suggested the use of the physical length of the cavity to have a closer tie to the real estate gradient of a structure. The general agreement of the rest of the audience was that this is not practical, as the real estate gradient is mostly driven by other external components that derive from the accelerator layout (e.g. focusing elements).

Another point that needs clarification is the β of a structure. Some people tie this to the active length of a structure, which is a purely geometric quantity. The proposal from the discussion is to use the β , where the transit time factor is maximal. While this number requires the knowledge of the RF-fields to be known, it suits the purpose of the structure to structure comparison.