PRESENTATION at IEFC 1st September

We have now a scheduled presentation for the 1st September at IEFC, on

Operational scenarios and related beam time requests

This comes right after a related presentation at the HL-TCC, Thursday the 31st.

Speaker at IEFC: G.Vandoni,
Speaker at the TCC : still to be defined.

OPERATIONAL SCENARIOS

RF Commissioning and conditioning

In “out-of-beam” conditions, the cryomodule is qualified for RF and mechanical operation. Several weeks of RF conditioning, plus test of correct operation of the transfer table being moved in- and out-of-beam

RF synchronization to beam

Cavity frequency is synchronized to the beam frequency variations over the entire energy range from injection (26GeV) to flat top (450GeV), with the 3 energy plateaus characteristic of SPS operation. Similar to the sequence applied to synchronize beam in LHC. 2 shifts of 24h each.

OPERATIONAL SCENARIOS

Transparency to beam

All beam transients from injection to flat top need to be qualified, counter-phasing the cavities: scope is to study all parasitic effects of “transparent” cavities in all beam transients up to maximal energy. 2-3 slots of 24h.

High intensity RF operation

Beam induced failure scenarios are more likely to occur at high intensity. Slot largely dedicated to Machine protection issues. The number of slots is difficult to foresee, but they can already be in the form of 8h+ shifts.

Performance

Cryogenic heat load, the maximum stable voltage attained with beam (beam induced beam load), adiabatical ramping up and down of voltage, phase manipulation, optics with crabs, RF non linearities, HOM power, emittance growth, beam instability. All this – under the assumption we can easily go in- and out-of-beam – can be in 8h+ shifts.

OPERATION ORGANIZATION

Head, organizer and linkperson for operation in the SPS: Rama.

He will gather and organize a small team around him, with actors depending on the particular operation step.

E.g.
Step 1 Eric and Kurt
Step 2, Philippe and coworkers
Further, relevant actors from ABP will be identified for step 3. Ideally, an experienced operator from the SPS team should be pinned to all crab-cavity MD's. Other persons have expressed an interest in participating to the tests: these include Graem Burt, Silvia Verdú, Ilan Ben-Zvi.