Request for MDs in the SPS from SPSU SG and RF Group

1. Problem with ZS - what can be done before?

**(A) LHC beam:**

25 ns bunch spacing

(1) Scrubbing run (+ZS studies)

(2) Beam loss studies (flat bottom) - (e-cloud or TMCI?):

- measurements during scrubbing run and in following MDs with "reference" conditions"

- effect of transverse emittance, chromaticity, working point, voltage

- compare 25 ns and 50 ns spacing, different number of batches

(3) ZS and MKDH with ABT Group

(4) e-cloud studies in coated and uncoated magnets

(5) maximum emittance blow-up for high intensity beam (RF team)

50 ns bunch spacing

- MKDV

**(B) Single bunch (parallel MD cycle when possible):**

(1) Inject maximum longitudinal brightness N/emit and maximum N

Measure the threshold of the TMCI as a function of

- chromaticity

- voltage

- double RF system settings

- transverse emittance

(3) Longitudinal instability in a single and double RF system

- variable intensity, constant other bunch parameters, 5s (or max) long

flat bottom

**(C) Maximum single and total intensity possible from injectors (any number of bunches) - joint MD with PS and PSB**