Notes from 31/10/14 meeting on possibility of longer BI.DIS rise time

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Philippe (slides) compensation of transient beam loading (slides). 2 us gap will give a 4% droop in the DTL1. 1 us is 2%, but without any regulation. The feedback and feedforward will reduce this effect, to below the 1 us (uncompensated) gap case, for any gap length. In conclusion, transient loading compensated OK for any gap above 1us, for any gap length.

Cavity field distribution no issue, as confirmed by Frank and Alessandra.

Chopper on time no issue, confirmed by Alessandra

PSB RF and B field compensation no issue, as confirmed by Alfred.

Maximum beam intensities compared by Chiara – can reach 2.1x present for 120 turns, and 2,6x for 150 turns, for 50 mA source current (slides)

AB question of energy modulation recovery time - can increase the painting period to fit the 150 turns. But clearly having PFNs as long as possible gives maximum flexibility – Wim warned about limits on some elements like the H- dump, in case the source current is high.

Conclusion: ABT will use the possibility of increase DIS rise time, to simplify the switch triggering circuit using snubbers. The plan is to keep two series switches and 10 kV, with 150 turns per injection, but avoid all the complexity in the triggering. Action ABT to update design and define new rise time.