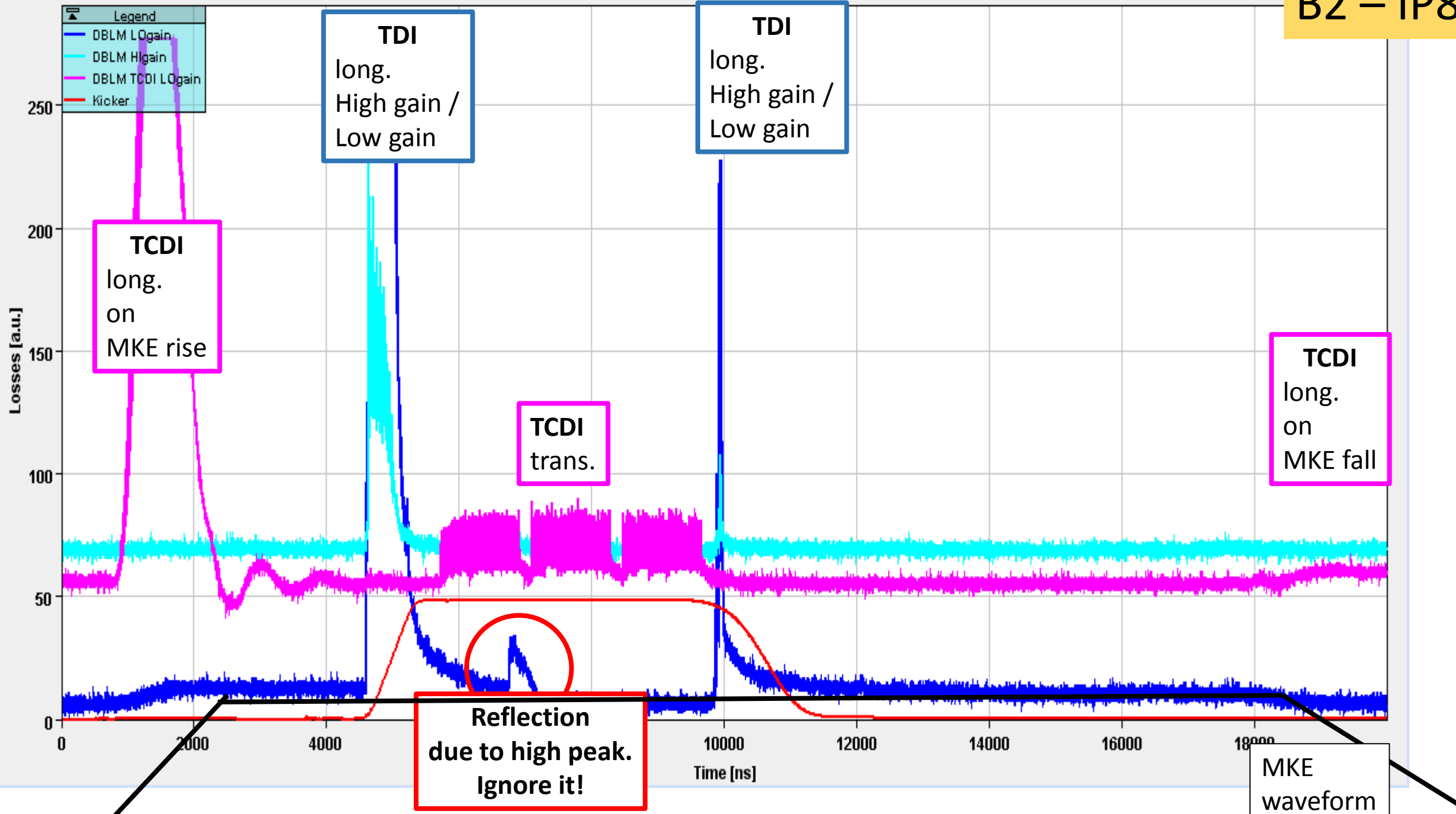


Injection dBLMs How-to

F. Burkart



Losses at Di



TDI
long.
High gain /
Low gain

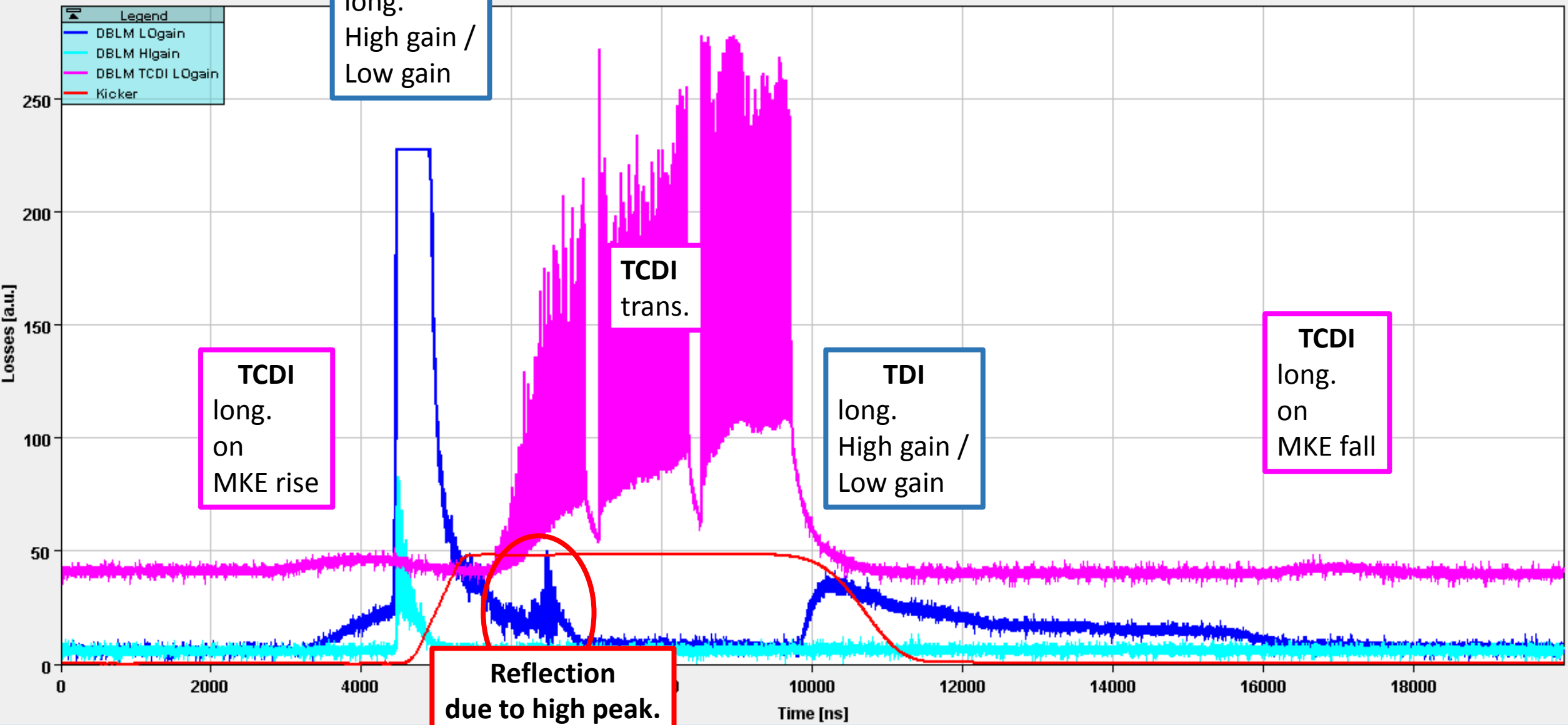
TCDI
long.
on
MKE rise

TCDI
trans.

TDI
long.
High gain /
Low gain

TCDI
long.
on
MKE fall

Reflection
due to high peak.
Ignore it!

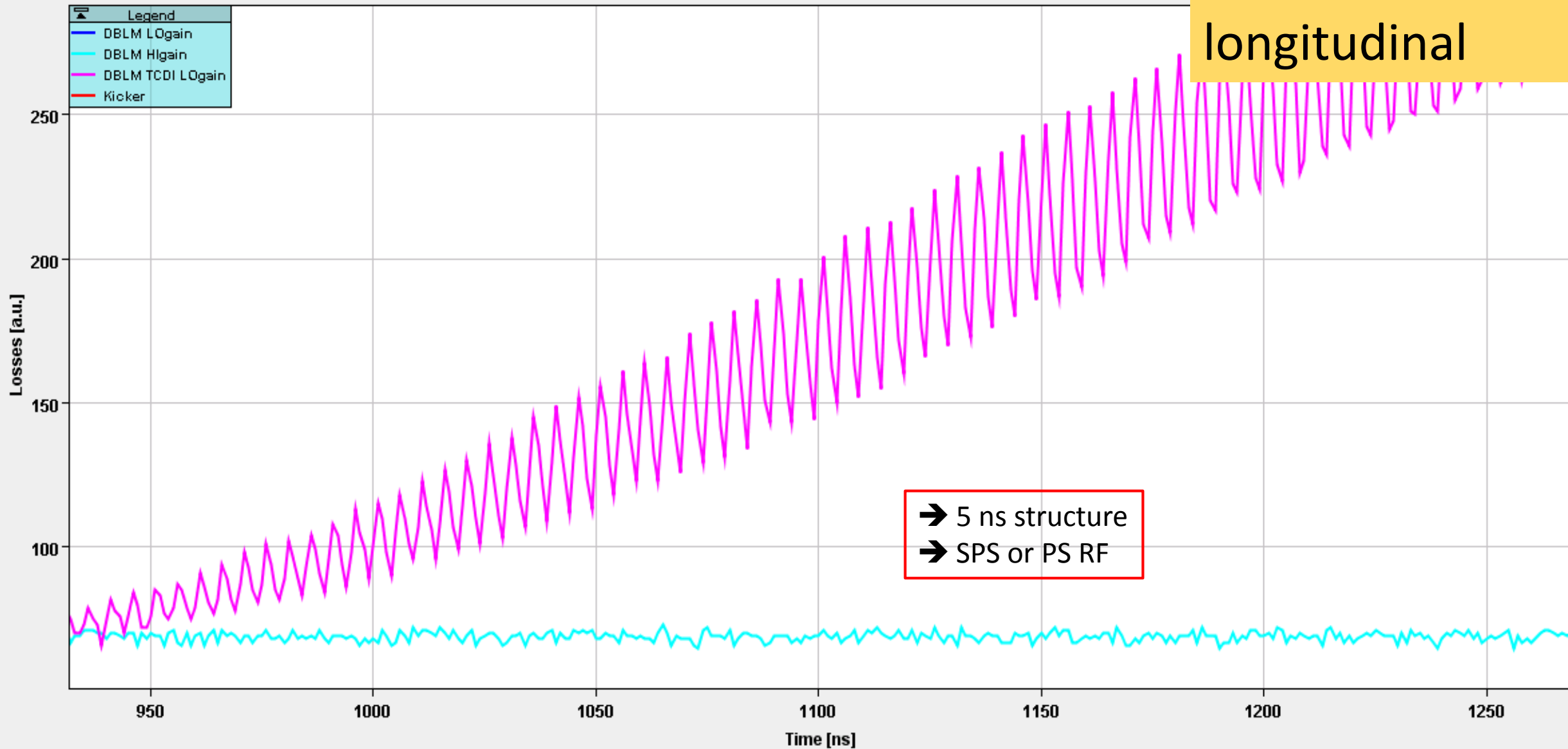


General comments

- TCDI transversal losses in B2 – normally flat.
- TCDI transversal losses in B1 – increase.
- Use **zoom function** to check:
 - if 5ns or 25ns loss structure.
 - Batch spacing - Influence of MKP on first or last bunch of the batch.
- Integrated losses on the TDI are in the order of $E7 - E9$ protons!

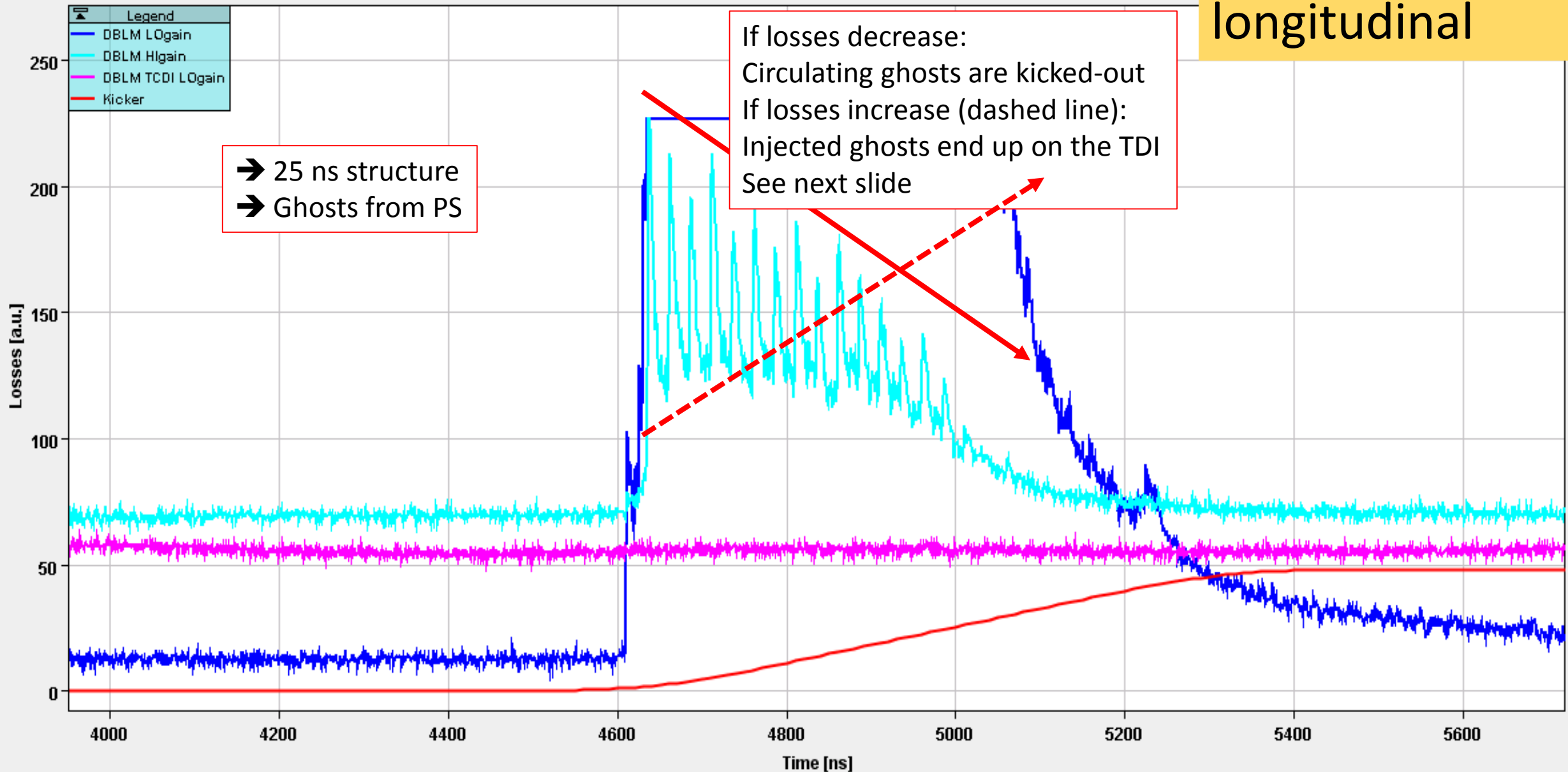
Losses at Diamond BLM

Zoom TCDI
longitudinal



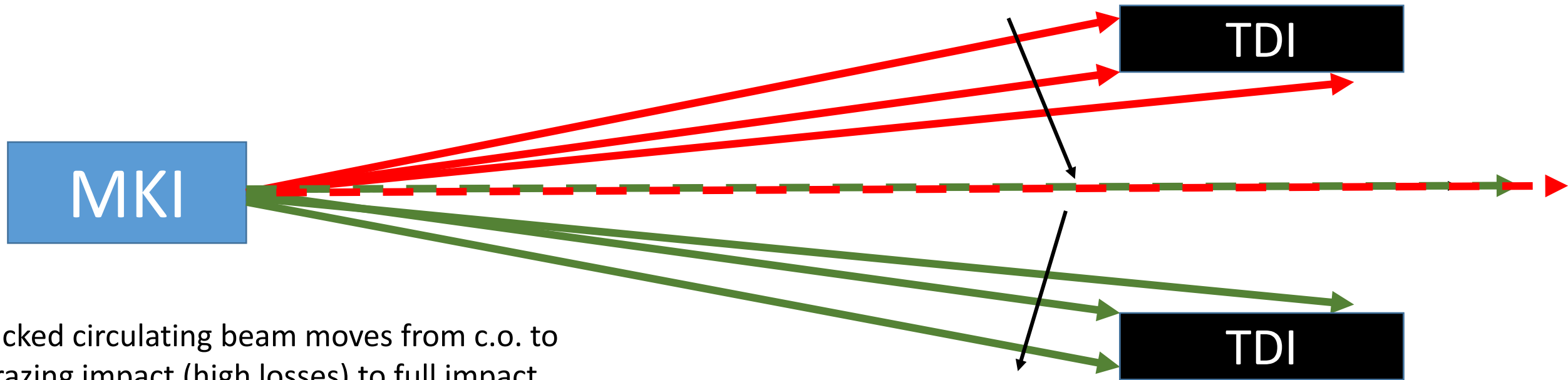
Zoom TDI longitudinal

Losses at Diamond BLM

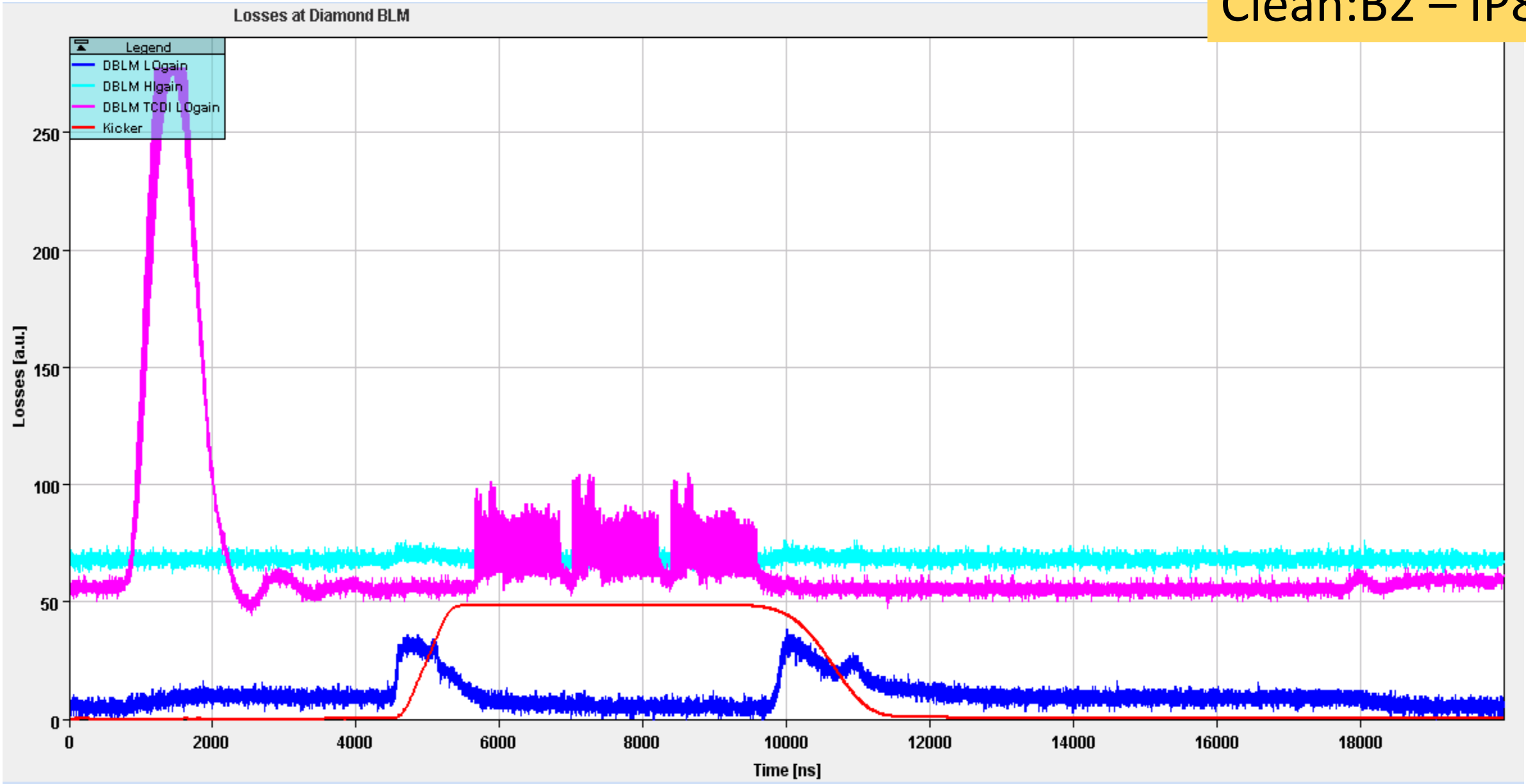


Loss shape on the TDI

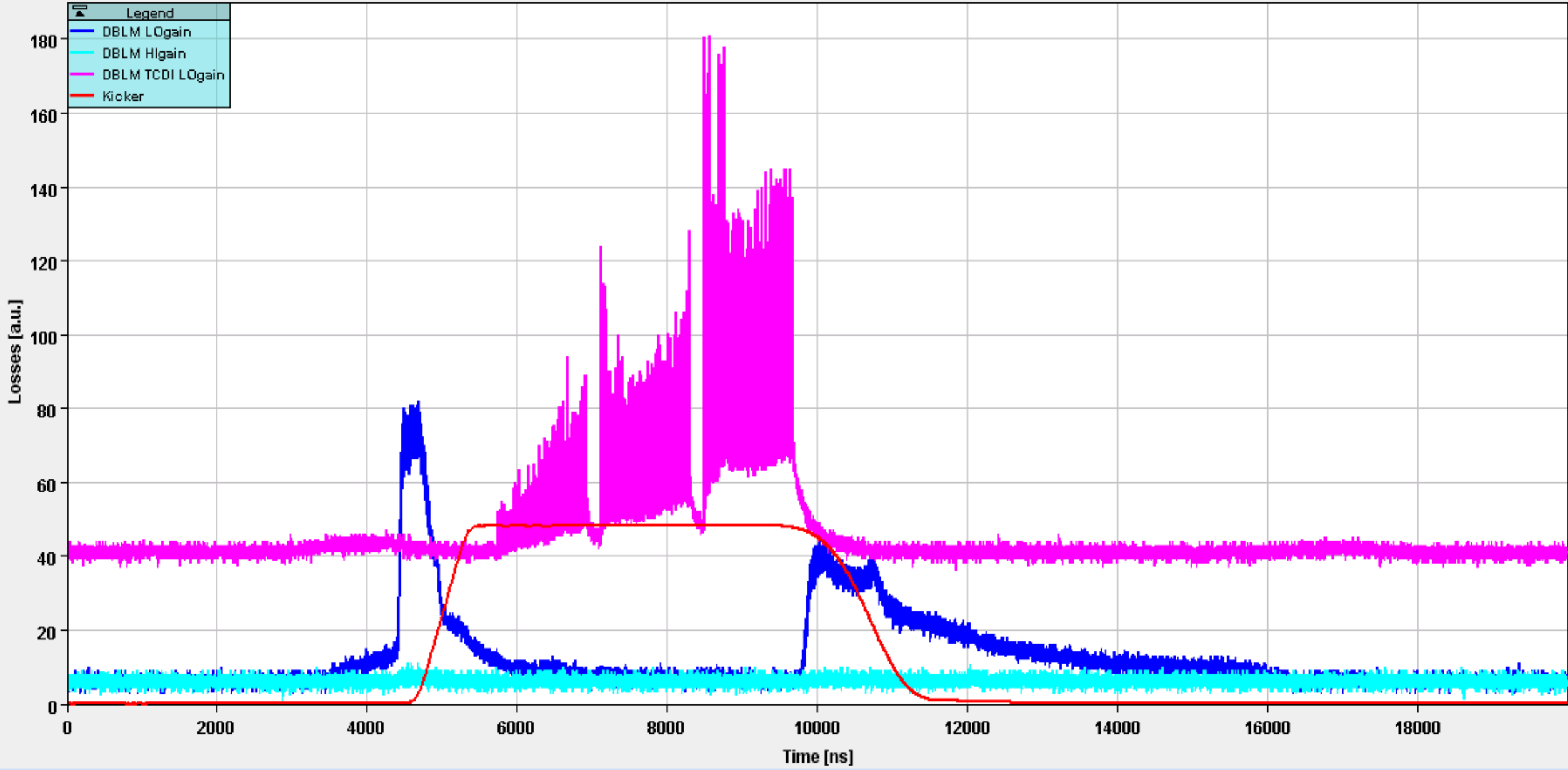
Kicked injected beam moves from full impact parameter (low losses) on the TDI to grazing (high losses) to c.o. (red).



Kicked circulating beam moves from c.o. to grazing impact (high losses) to full impact parameter on the TDI (low losses) (green).



Losses at Diamond BLM



In case of problems:

- 25 ns ghosts on MKI rise or fall:
 - Check PS extraction kicker length and adjust to batch length.
- Very high amount of 5ns on MKI rise or fall:
 - Check function of second PS cavity used for bunch rotation.
- Oscillations in TCDI transversal losses:
 - Check SPS stability.
- Note: Don't compare amplitudes of B1 and B2! Different detector efficiency, detectors have a small acceptance and therefore they are sensible to slightly different positions.