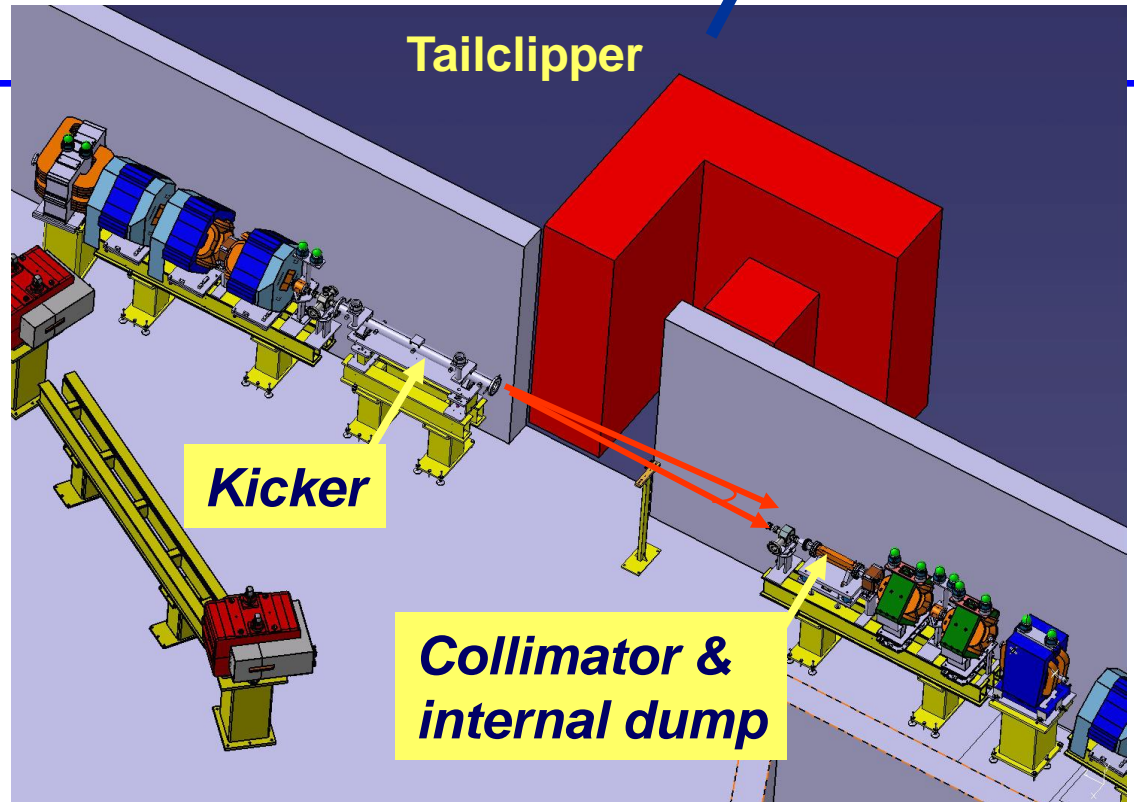
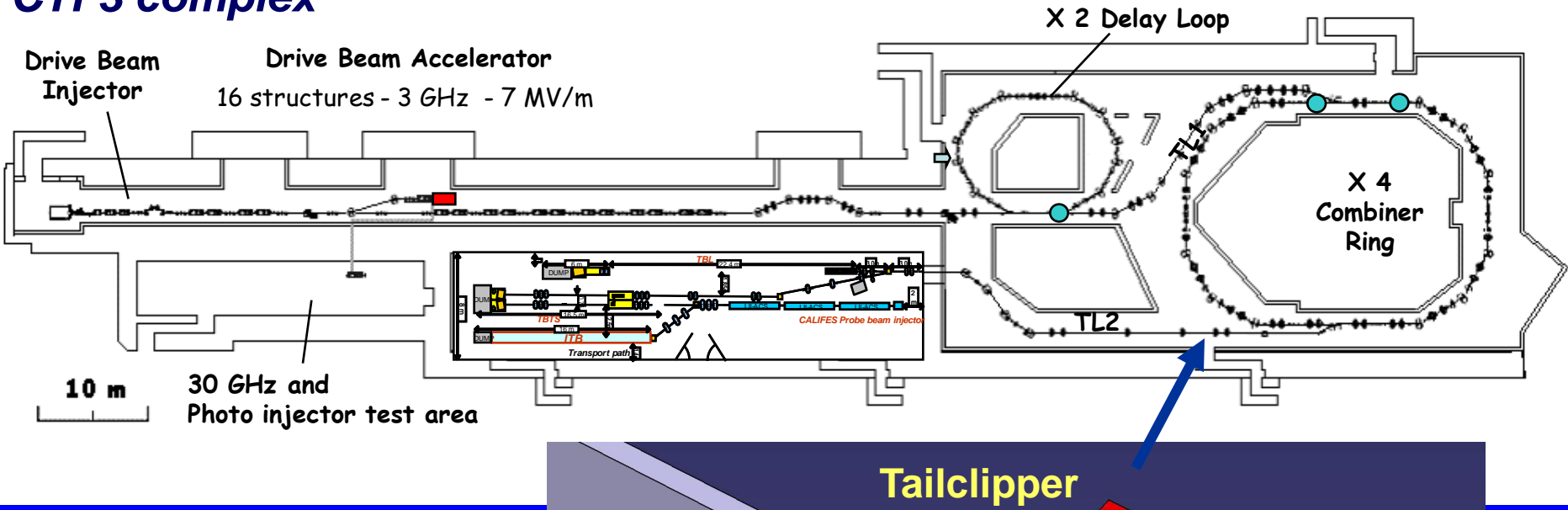


## *Tail Clipper*

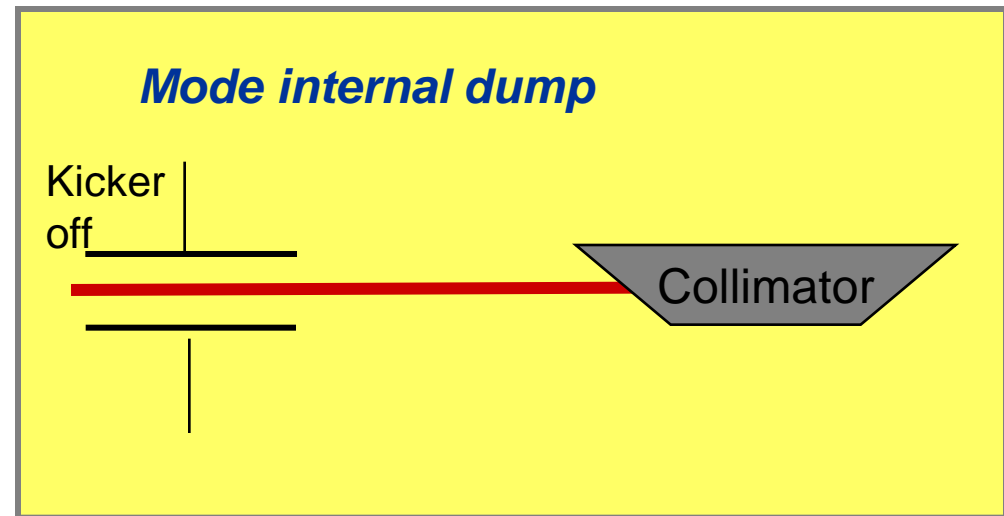
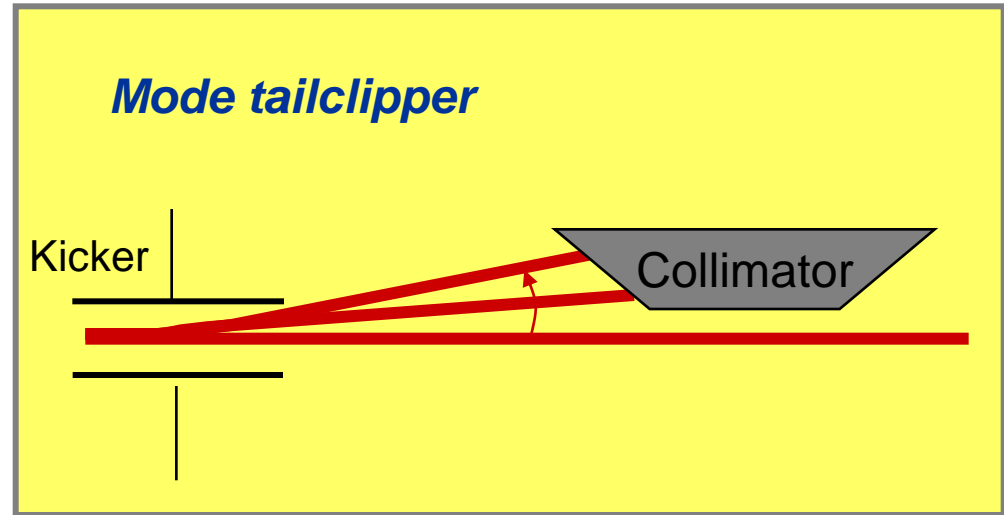
*Hans Braun, CTF3 collaboration meeting, 22.1.2008*

# CTF3 complex

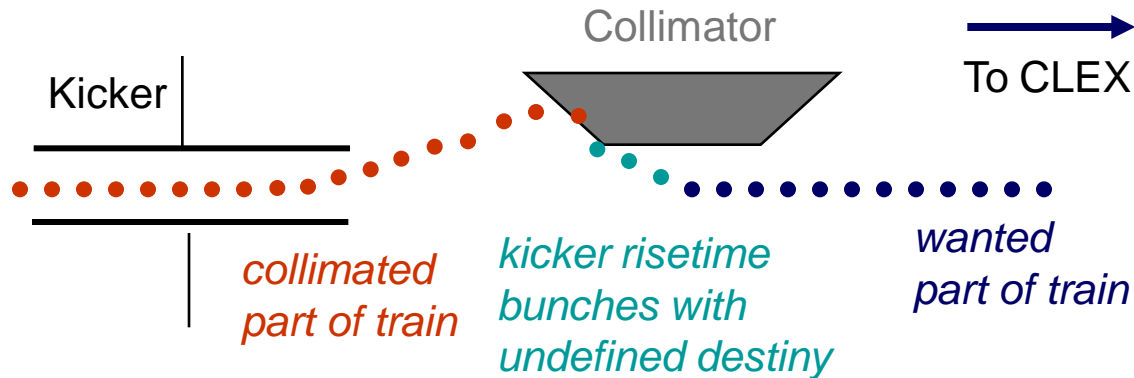


## Tailclipper has three functions

1. Adjusting bunch train length from CR.  
Necessary because CR imposes bunch train of 140 ns.  
In CLEX this beam is used to generate 12 GHz RF in TBTS and TBL.  
For RF conditioning variable pulse length is highly desirable.  
Duration is adjusted with a fast kicker magnet of variable timing together with an adjustable single jaw collimator.
2. Provide an internal dump for safe installation work in CLEX during beam studies with the combiner ring. For this purpose the adjustable jaw of the collimator is completely moved in the beampipe, assuring that no beam can pass.
3. Safety measure in case somebody breaks access chain to CLEX during operation with beam in CLEX. Tailclipper goes rapidly to dump mode with failsafe mechanism.



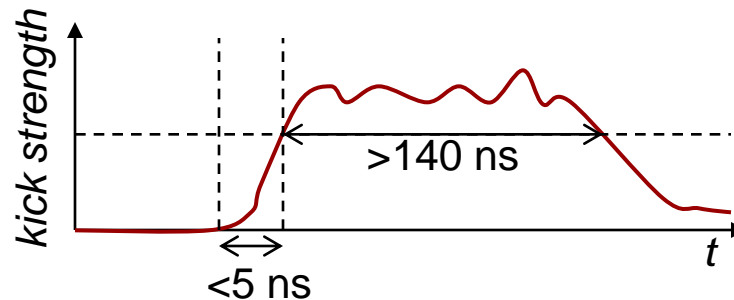
# Tailclipper

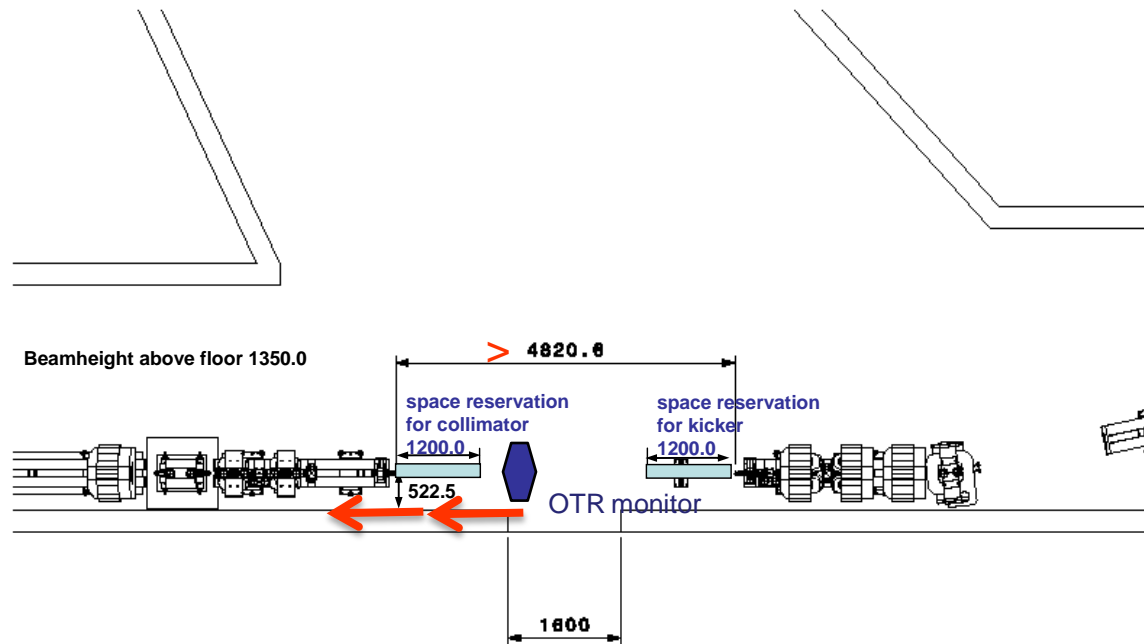


Purpose: adjust length of drive beam pulse and therefore 12 GHz RF pulse in Two Beam test Stand, as required for 12 GHz RF conditioning

Method: fast kicker which kicks unwanted part of 140 ns bunch train into a fixed collimator.

Key requirements:





### Beam parameters for tailclipper

Particle type	electrons
Beam energy	100-300 MeV
Repetition rate	0.8-5.0 Hz
Incoming puls duration	140 ns
Adjustment range in tailclipper mode	0-140 ns
maximum beam puls current	35 A
beam size range (rms, $1\sigma$ )	1-5 mm
Nominal vertical beamsize for tailclipper operation (rms, $1\sigma$ )	1 mm
Displacement of beam on collimator entry face due to kicker action	> 6 mm @ 200 MeV
maximum average beam power	3.7 kW
Inner aperture of diameter of upstream and downstream beam pipe	40 mm