

Quench limits for the sc-link in IR3

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Using data from I. Kurochkin, see
former presentation

Steady state at top energy

- Sc-link in its new way :
 - down the trench all along
 - Climbing at D4 (after any coll or absorber)
 - > For beam lifetime $\tau = 1\text{h}$, $p_{\text{max}} = 0.8\text{ mW/cm}^3$
- Steady quench limit : $p_{\text{q}} = 1.5\text{ mW/cm}^3$
(R. Herzog, nov04)
- → Allows in principle $\tau = 30\text{ mn}$ steady
- OK for first years, but requires careful monitoring

Flash at the beginning of the ramp

- Transient quench limit from 5.5K to 9K : $e_q = 30 \text{ mJ/cm}^3$
- From Igor Kurochkin : $f = 5\%$ off-bucket $\rightarrow 43 \text{ mJ/cm}^3$,
the fraction presently allowed is

$$F = 3.5 \% \text{ off-bucket}$$

- This is not enough for the nominal condition, but OK for the first years
- Shall we
 - wait and monitor carefully first ?
 - Consider some shielding over the trench ?
 - Launch a shielding study anyway?

Critical areas

- Downstream of primary up to D3
- Nearby first Secondary Coll (4 x less)
- → If needed , shielding at these two locations only
- A thin floor top of the trench shall do it (thickness, material to be studied)