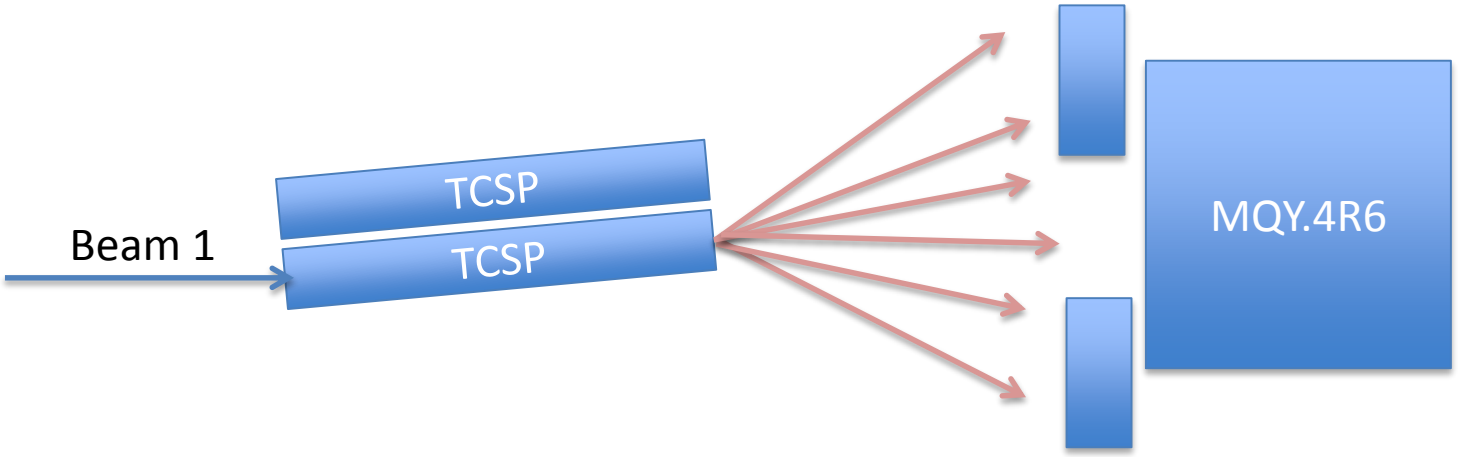
Quench Test

		Comments
Beam Energy	450 GeV	
Optics	Injection	
Orbit change	No	
Collimation change	Yes	Close TCSP.4R6 and TCPs in IR7
RF system change	No	
Feedback change	No	
What else should be changed		Current of MQY.4R6
Parallel studies possible	No	
Bunch intensity	3-6-9 e10	
Number of bunches	1	
Transverse emittance	1-2 um	Not influent!
Beam	1	Using Beam 1 allows stopping any escaping beam from the TCSP.4R6 with the TCPs in IR7
Time [hours]	4	



Quench Test

- In order to check the proper functioning of the quench protection system PLI2.e3 test should be performed and analysed before starting injecting (M. Bednarek).
- Machine in **inject and dump 0 turns** mode (no post-mortem)
- **Mask position** and **energy interlocks for collimators**
- **Mask** all maskable **BLMs**
- **Mask BPM interlock in point 6**
- increase "**Probe Beam Limit**" up to **$1 \cdot 10^{11}$**
- Open **thresholds of TCSP.4R6 and TCP in IR7 collimator to parking**
- **Close the TCSP.4R6** jaws with a 1 mrad angle and across the beam center (0.335 mm) to fully intercept the beam: **LU = 4.5 mm, LD= 5.5 mm, RU = 3.5 mm and RD = 4.5 mm** (1 mm gap, i.e. 0.5 sigma)
- **Close TCPs for beam 1 in IR7** in order to stop any escaping beam, same configuration as TCSP.4R6
- **Q4.R6** at **nominal injection current** (~165 A)
- Inject 1 bunch o**f $3 \cdot 10^{10}$** (for B1)
- Check losses at TCSP and downstream magnets, specifically Q4.R6
- Check voltage drop at Q4.R6 (special QPS equipment) to detect quench/quenchino
- **Increase**, in steps of 500 A, t**he current of the magnet up to 3400 A** (i.e. the current up to which the circuit was commissioned during LS1) or until the magnet quenches (flattop current ~2400 A)
- **Repeat with higher intensity** ($6\text{-}9 \cdot 10^{10}$) if there is no clear sign of quench/quenchino.

Fully equivalent to test already performed in 2013 at the end of Run 1!