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# Real-time observation of non-interceptive Beam Current and Beam Position Measurements for FLASH and Conventional Proton Therapy at PSI

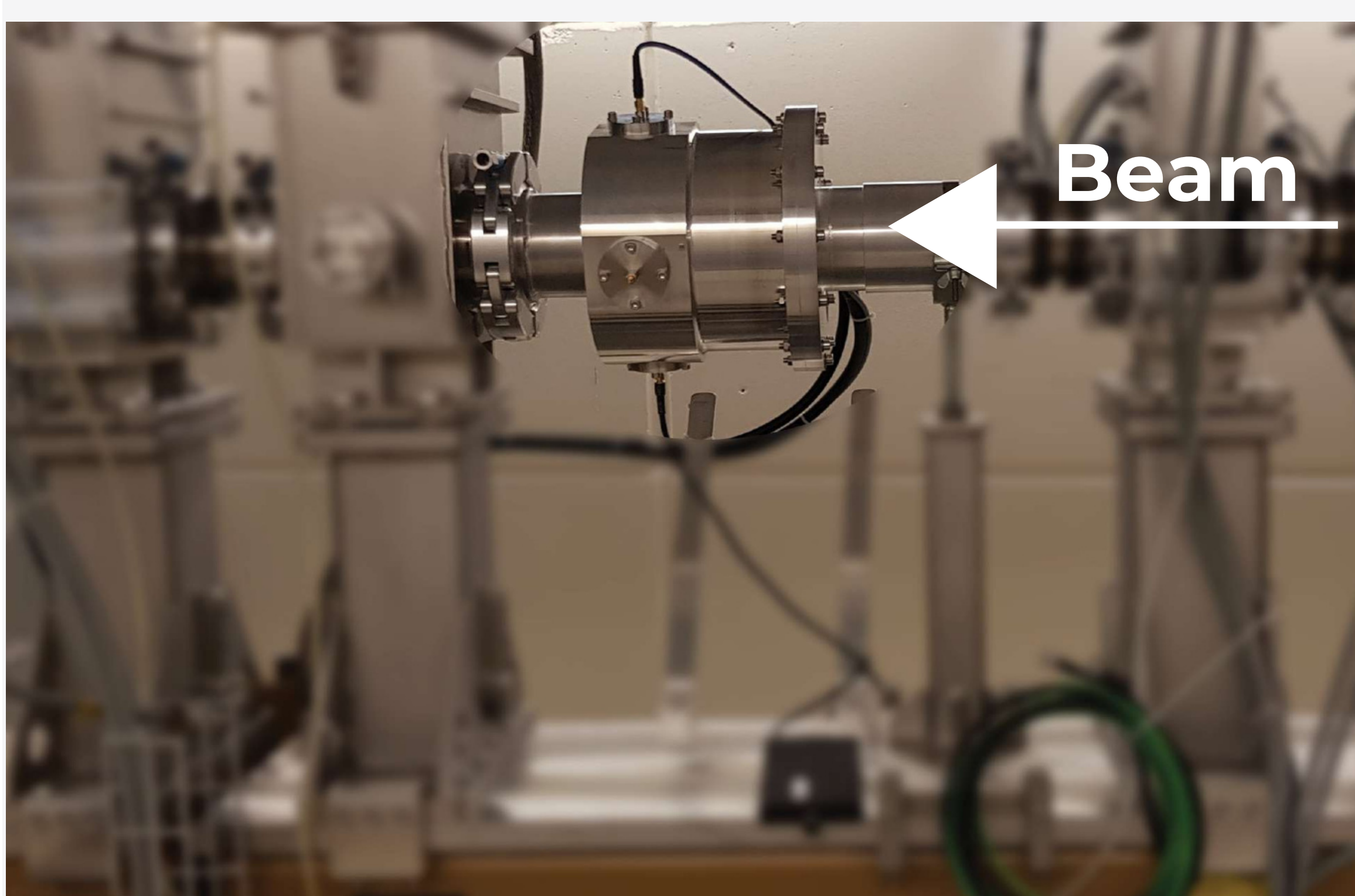
## Customizable



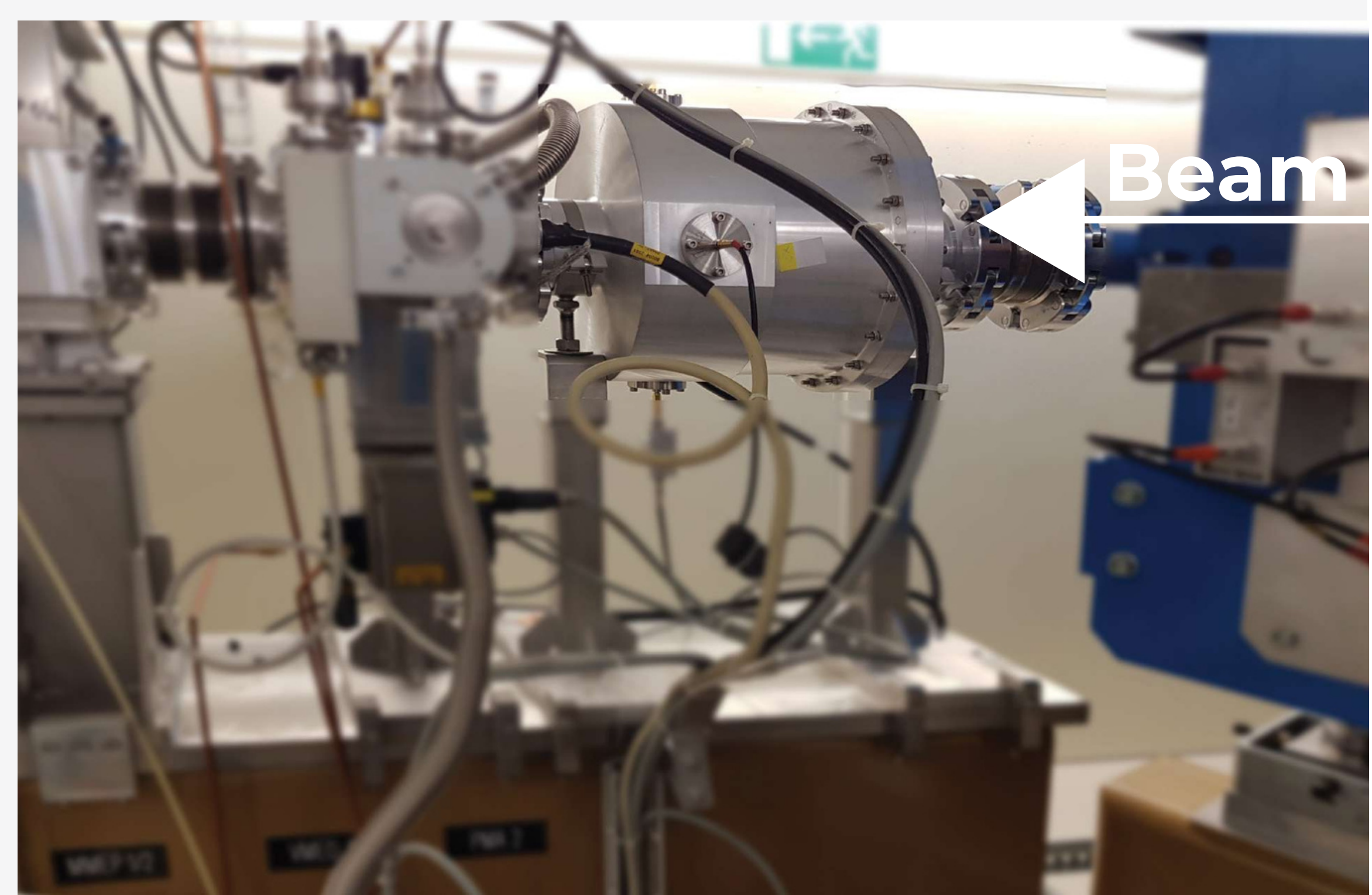
Libera Digit 500

Beam Current / Beam Position Observation @ 1 kHz refresh rate enabling 1 ms resolution

### Using PSI's compact cavity monitors (reentrant EM resonators)

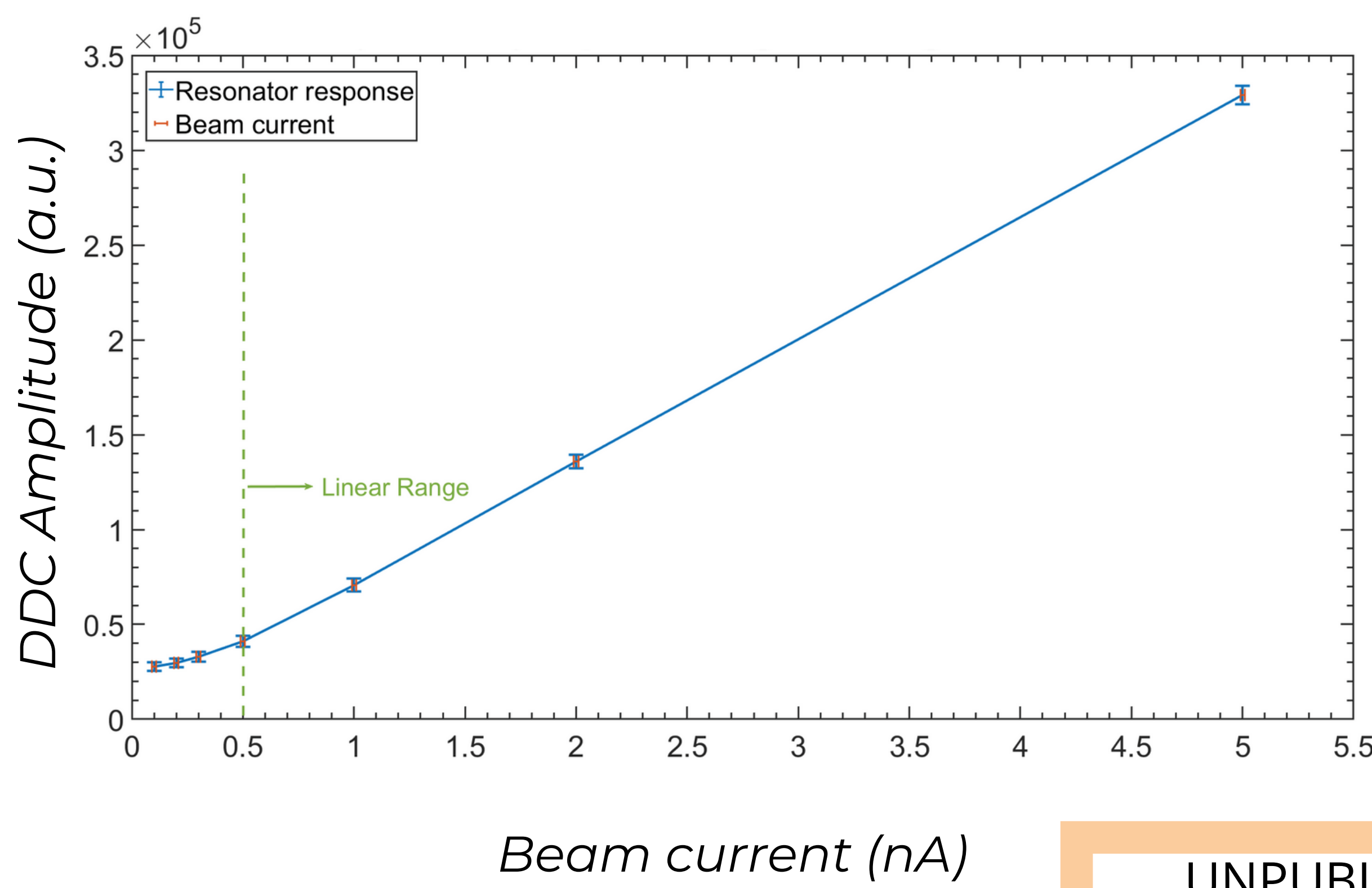


BCM - Beam Current Monitor (L ~ 20 cm,  $\phi$  ~ 20 cm)

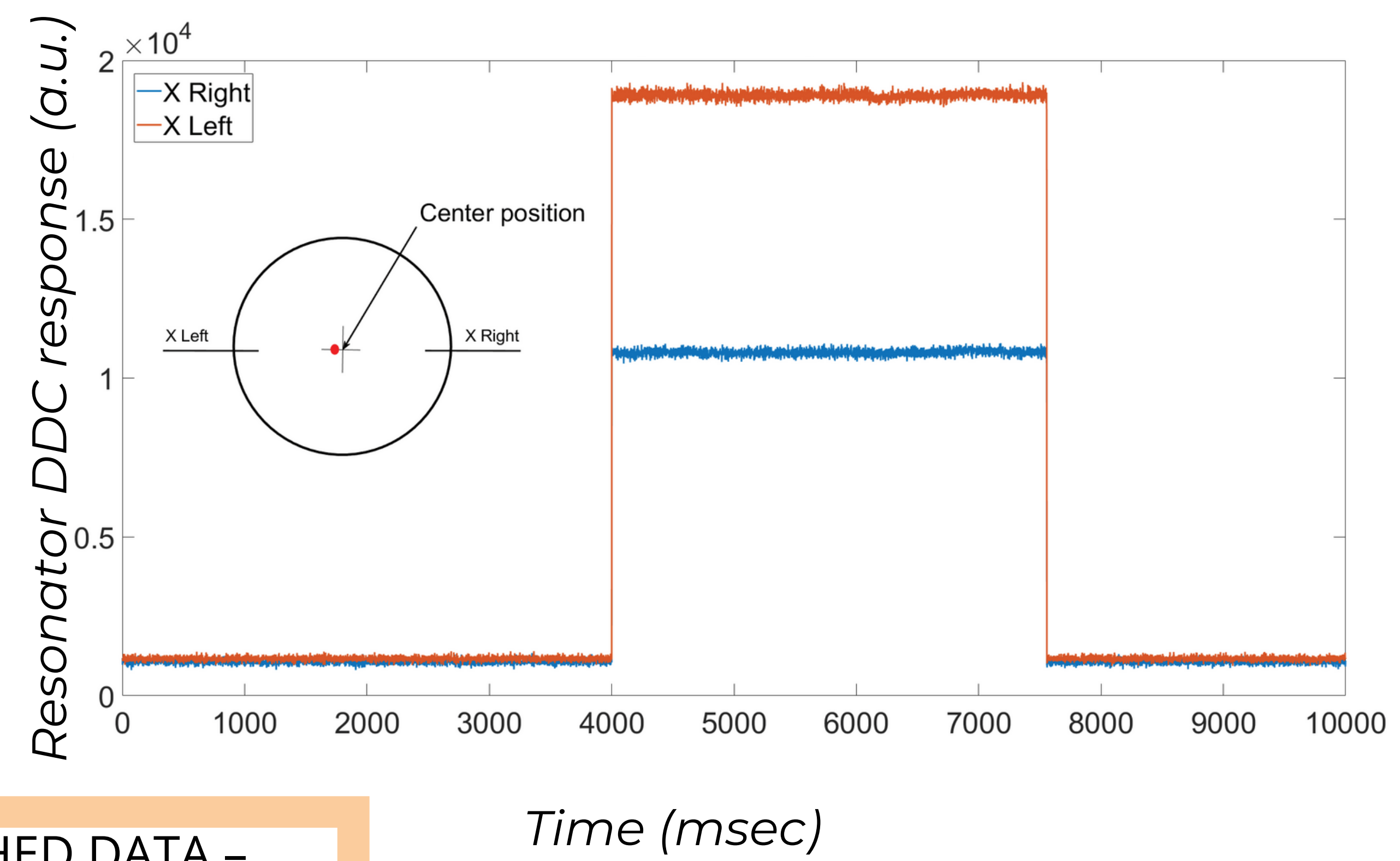


BPM - Beam Position Monitor (L ~ 30 cm,  $\phi$  ~ 30 cm)

BCM (resonator) response using Libera Digit 500 for 230 MeV



Cavity BPM response for a 100 nA and 2 mm offset proton beam recorded using Libera Digit 500



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