# Angular stability at extraction in the PS

# Introduction

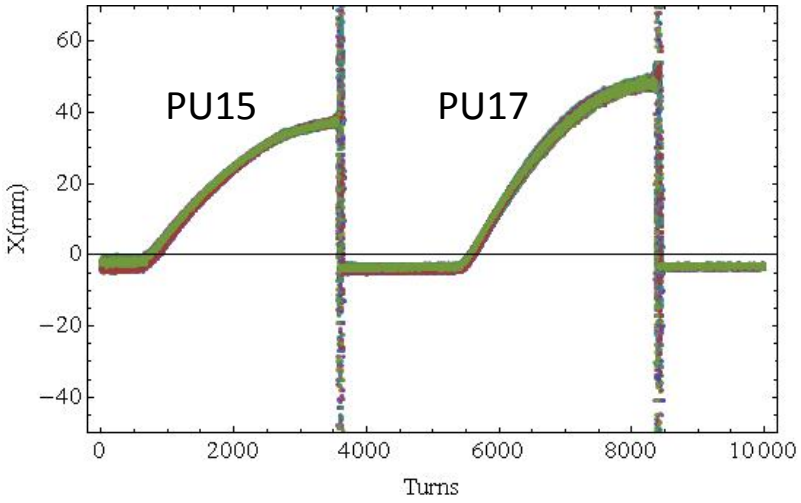
A correct alignment of the dummy septum blade is a crucial point for a good efficiency.

But the beam must also be stable in angle at extraction not to cancel effects of the correct alignment.

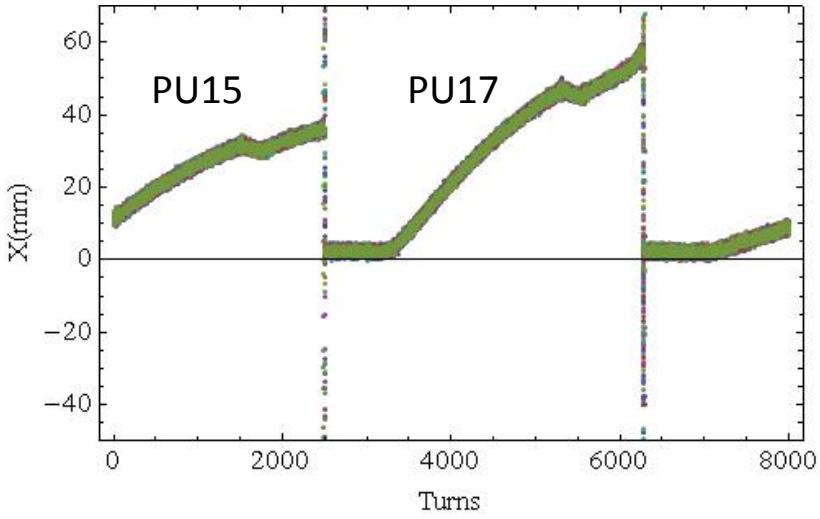
In order to verify it's stability, orbits at extraction have been measured for typical PS beams (TOF and LHCINDIV) to check their angle stability  in SS15.

# Orbits at extraction

LHC INDIV



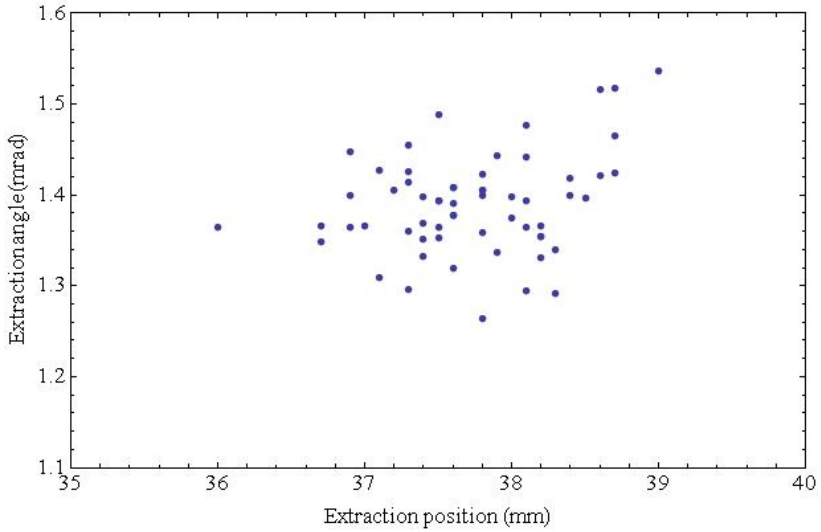

TOF



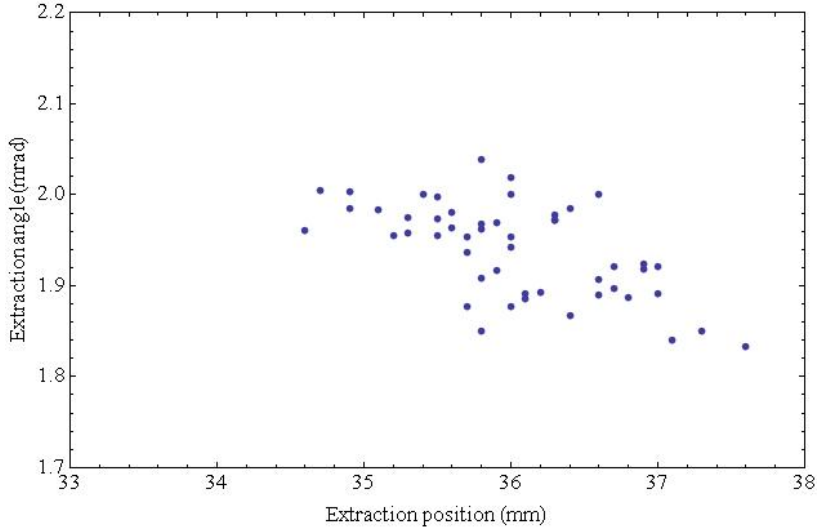
# Position/Angle at extraction at Pickup 15

The angle x' at one place of the ring can easily be calculated using the transfer matrix and the orbits.

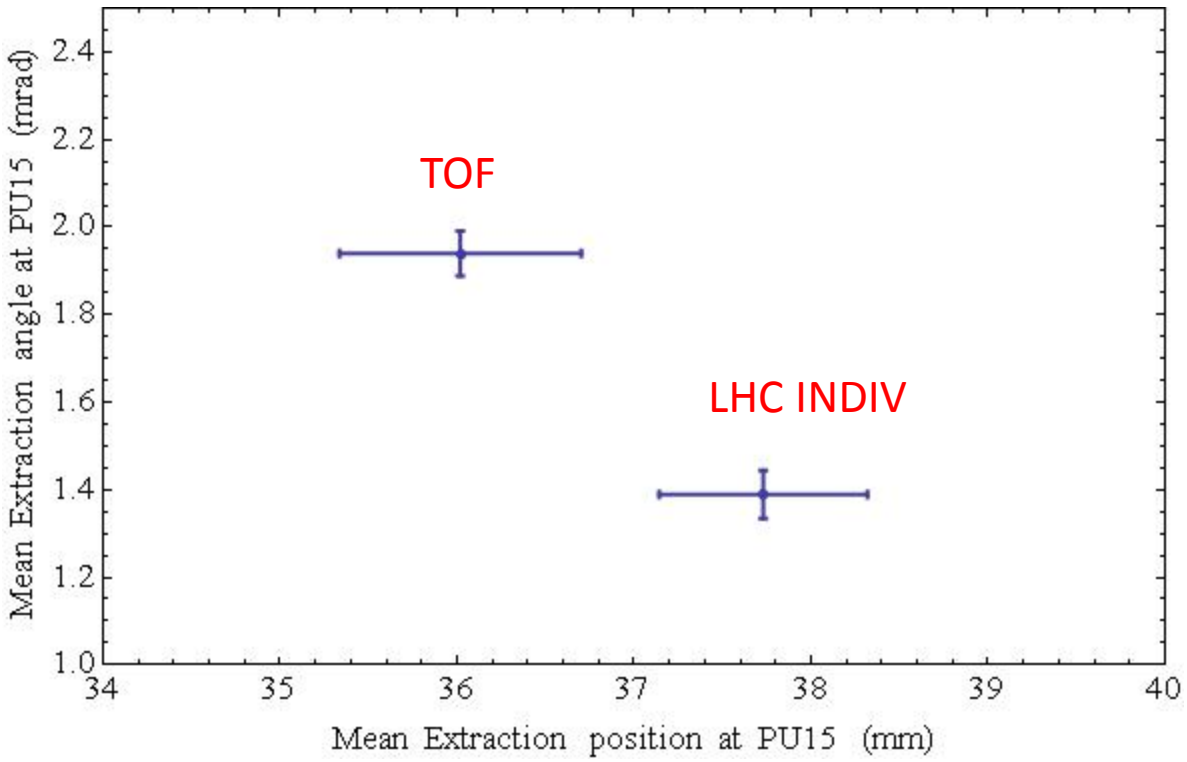
LHC INDIV




TOF



# Position/Angle stability at Pickup 15

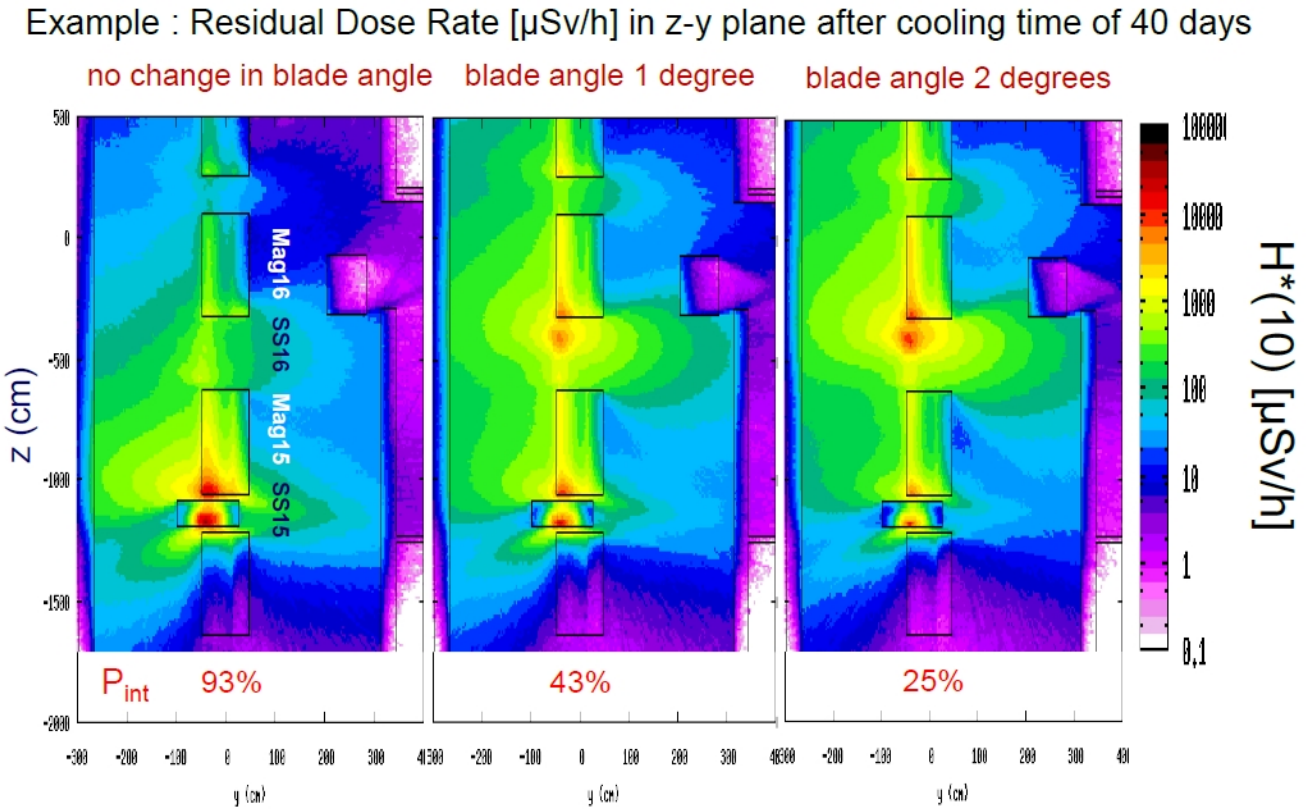



SD of angle at PU15 is lower than 0.1mrad (~0.06 mrad) in both cases.

SD of position at PU15 is lower than 1mm (~0.65 mm) in both cases.

# Which consequence for the dummy septum efficiency ?

According to S. Damjanovic slides (Sensitivity of the BLM position in SS15 to the dummy septum blade angle April, 26 meeting) The probability of interaction decreases by around 50 % per degree.




So a fluctuation of around 0.1 mrad induces a decrease of the interaction probability of 0.3 %