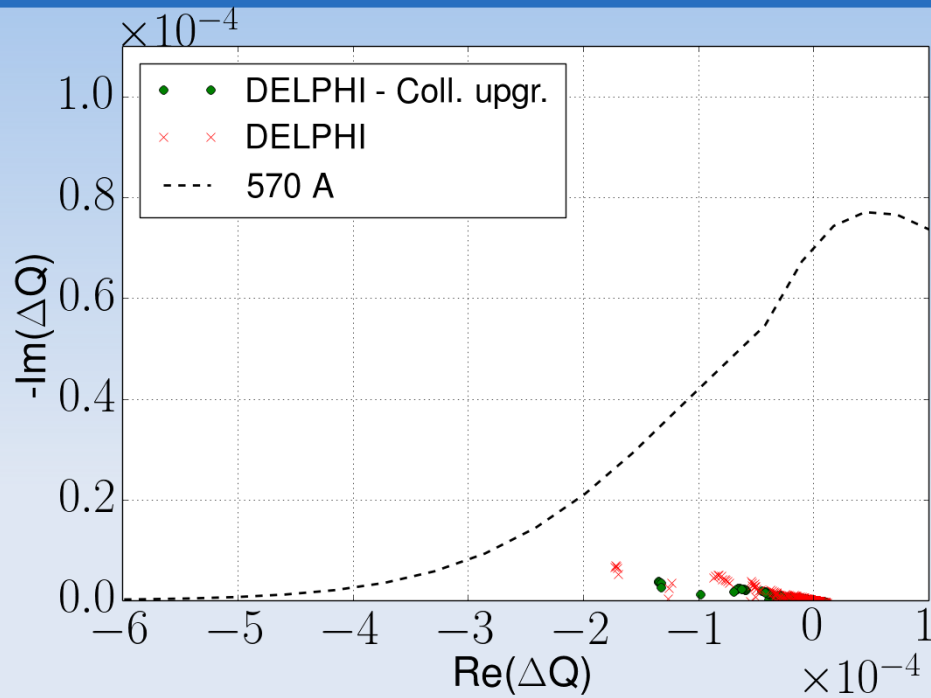




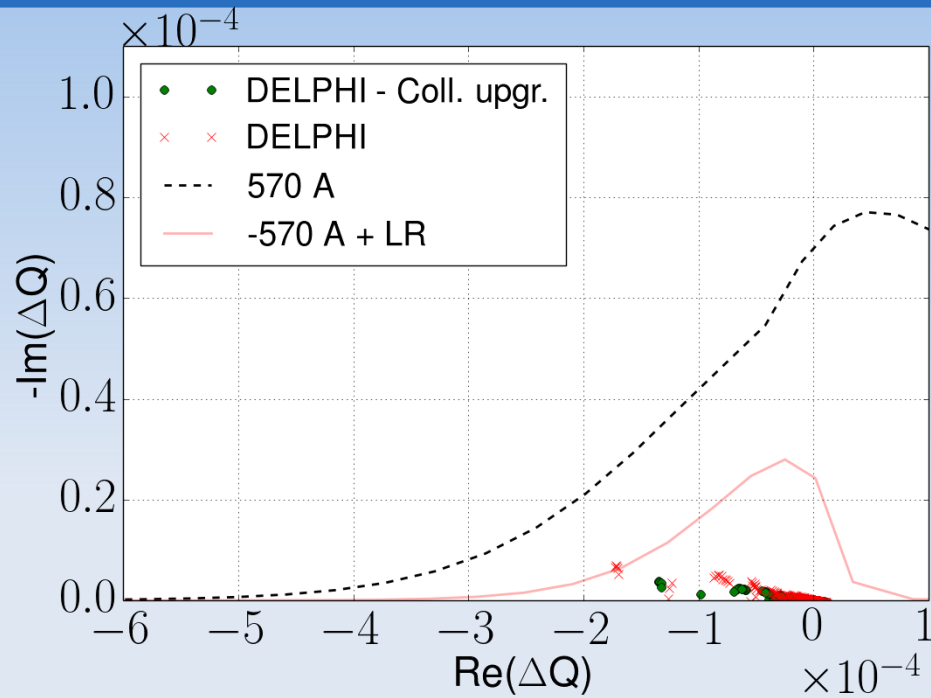
Run III



- The current optics with positive polarity offers enough margin for $1.8 \cdot 10^{11}$ in $1.8 \mu\text{m}$



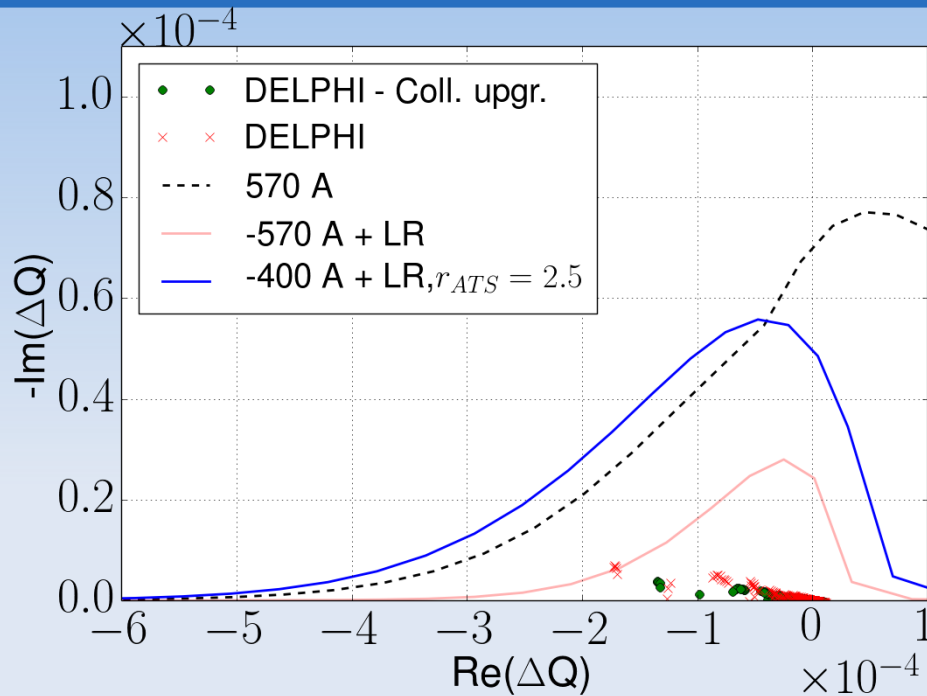
Run III



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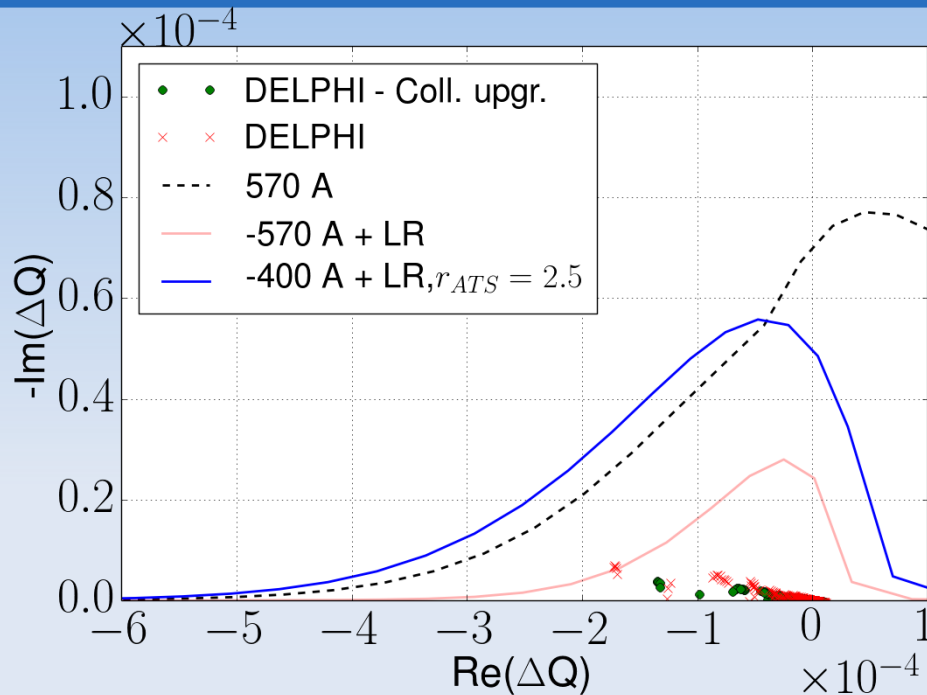
Run III



- The current optics with positive polarity offers enough margin for $1.8 \cdot 10^{11}$ in $1.8 \mu\text{m}$
 - To enable the potential of beam-beam compensation with the octupole (negative polarity), a tele-index is required to maintain the tune spread



Run III



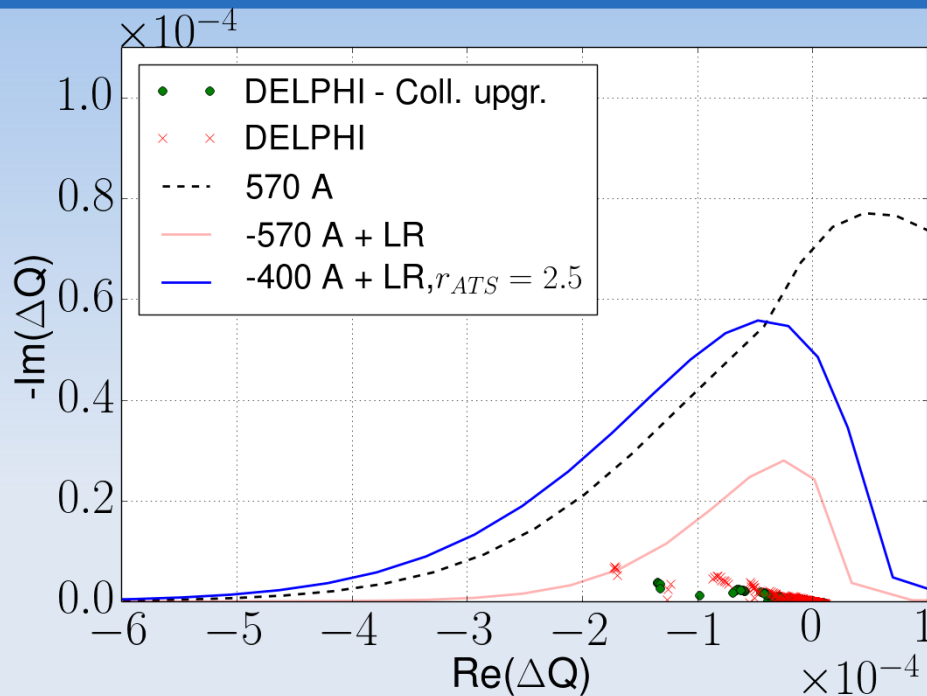
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→ Develop a (anti-)telescopic ramp, featuring enough margins for both polarities (see N. Karastathis)

- r_{ATS} or $1/r_{ATS} \sim 2.5$ would be sufficient for $1.8 \cdot 10^{11}$ in $1.8 \mu\text{m}$. $r_{ATS} = 3.1$ was tested during ATS MDs with BCMS bunch trains (both polarities)



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- Drawback with $I_{oct} < 0$: The stability with offset collisions is more critical
 - Head-on collision in at least one IP for special tests
 - Offset levelling range for physics (i.e. both IP1 and IP5) limited to 1σ ($L/L_0 \sim 20\%$)
 - Polarity reversal in stable beam could be envisaged if the quality of non-colliding bunches is not a concern (tested in 2018)