Updated stability thresholds

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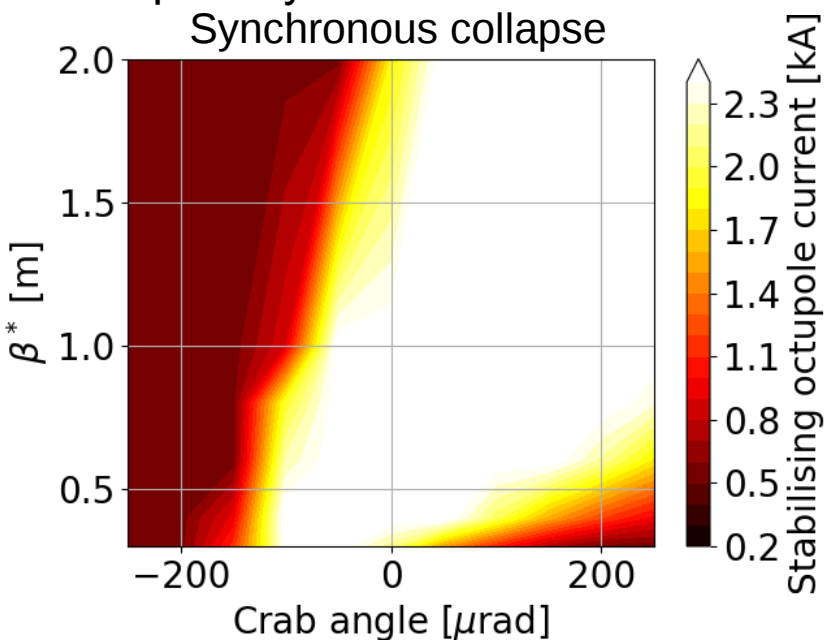
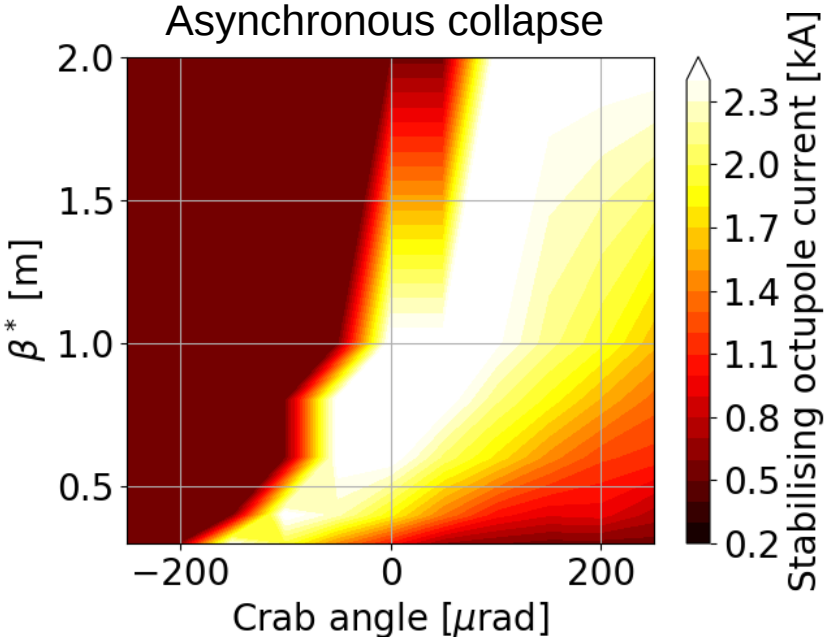
Content

- Updated thresholds including
  - Beam-beam effects
  - Residual optics errors
- Conclusion

Positive polarity



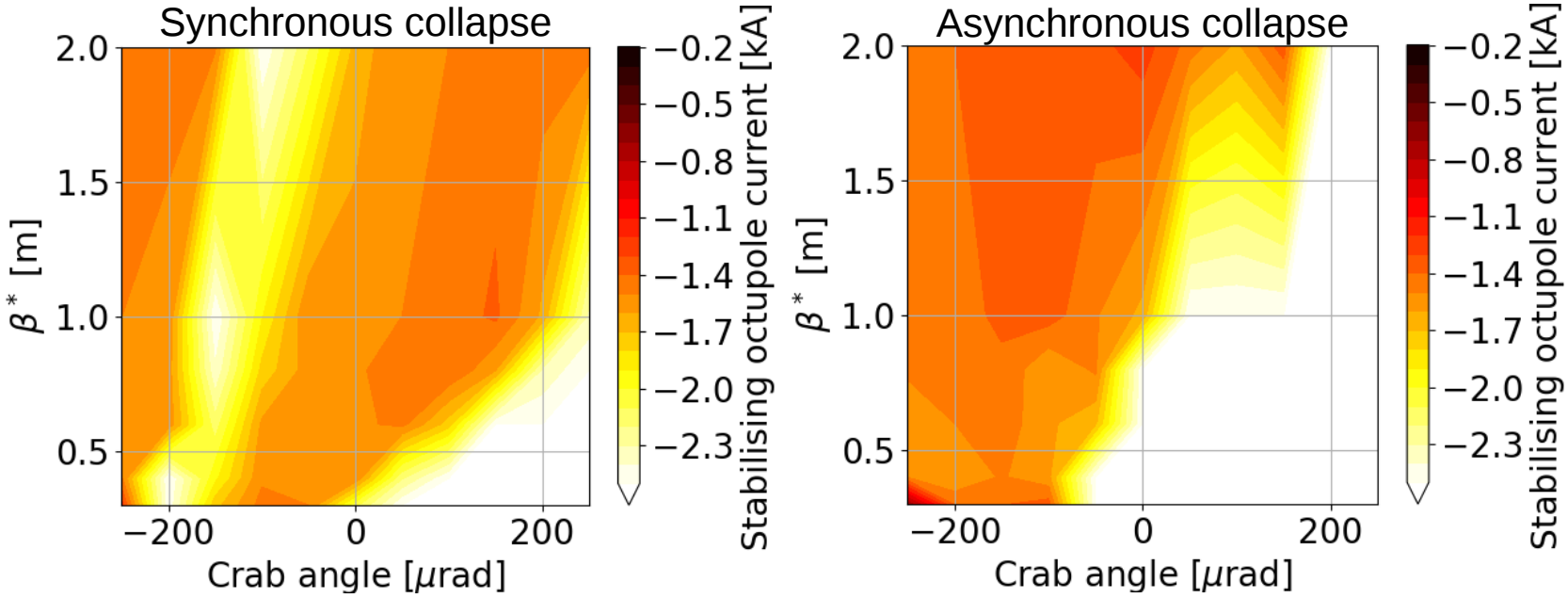


Old model

	CFC	LS2	Full	Full*
Oct. thres. [A]	760	570	450	550
Equ. tele-index	2.1	1.0	1.0	1.0

* → New full model, including 2 uncoated TCSs

Negative polarity



Old model

	CFC	LS2	Full	Full*
Oct. thres. [A]	-1900	-1600	-1300	-1540
Equ. tele-index	3.5	3.0	2.6	2.95

* → New full model, including 2 uncoated TCSs

Possible configurations (including residual lattice errors)

- Positive polarity :
  +4% for coupling
  +51 A for lattice non-linearities at β*=41cm
- Negative polarity :
  +4% for coupling
  -34 A for lattice non-linearities at β*=41cm

Old model

	CFC	LS2	Full	Full*
Oct. thres. [A]	515	505	450	492
Tele-index	2.3	1.6	1.0	1.6

	CFC	LS2	Full	Full*
Oct. thres. [A]	-540	-540	-535	-515
Tele-index	3.5	3.1	2.75	3.1

* → New full model, including 2 uncoated TCSs

Conclusion

- Both options (pos. pol.+teleindex 1.6 / neg. pol.+ teleindex 3.1) were already invalidated by DA with CC on. Possible alternatives are:

  → Reconsider the coating of the 2 TCSs

  → 1σ retraction (TBC with the new model)

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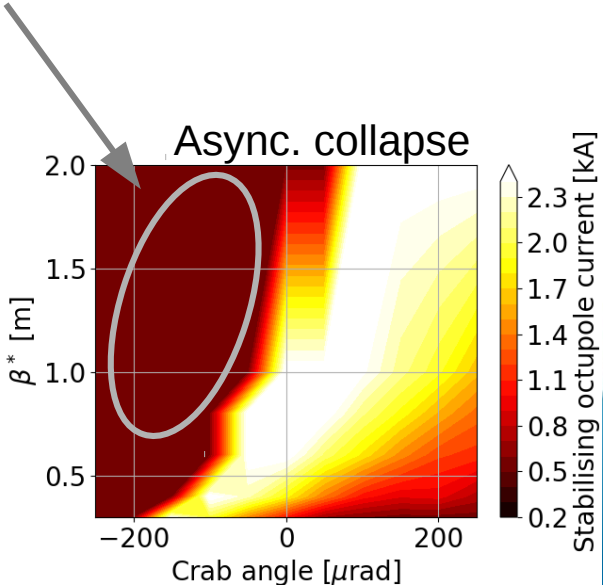
→ 1σ retraction (TBC with the new model)

→ Check DA with the positive polarity, higher β* and no/low crab angle at start of collision



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→ Reconsider the coating of the 2 TCSs

→ 1σ retraction (TBC with the new model)

→ Check DA with the positive polarity, higher β* and no/low crab angle at start of collision

→ Mitigate the Shakiri effect by introducing a separation bump in the crossing plane