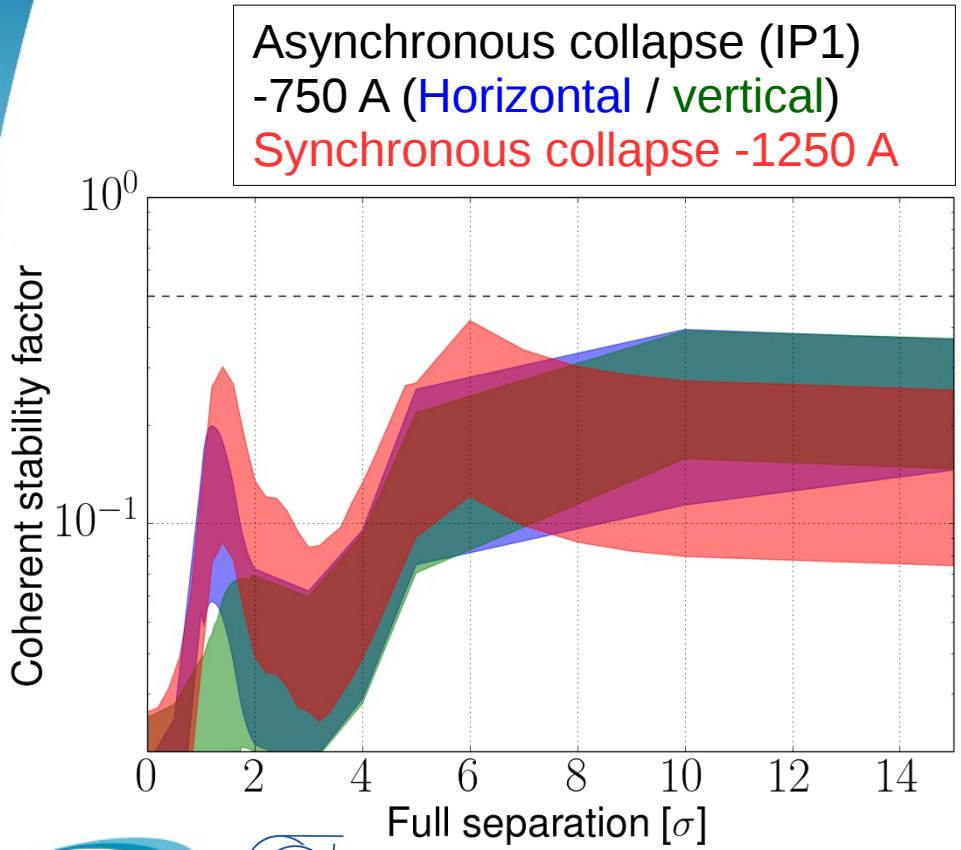
Landau damping with asynchronous collapse of the separation bumps

X. Buffat

WP2 meeting
21.08.2018

Ultimate BCMS scenario - Nominal collimator upgrade



- When collapsing the separation bump of one IP :
  - The long range contribution of the second IP is reduced → Beneficial impact on the minimum of stability at 6-10 σ
  - The minimum of stability at 1-2 σ occurs only in one plane and is less critical
- The stability is ensured by this head-on interaction during the collapse of the other IPs
- With the nominal collimator upgrade, the tele-index required is reduced from ~2.3 to ~1.7

HiLumi HL-LHC PROJECT

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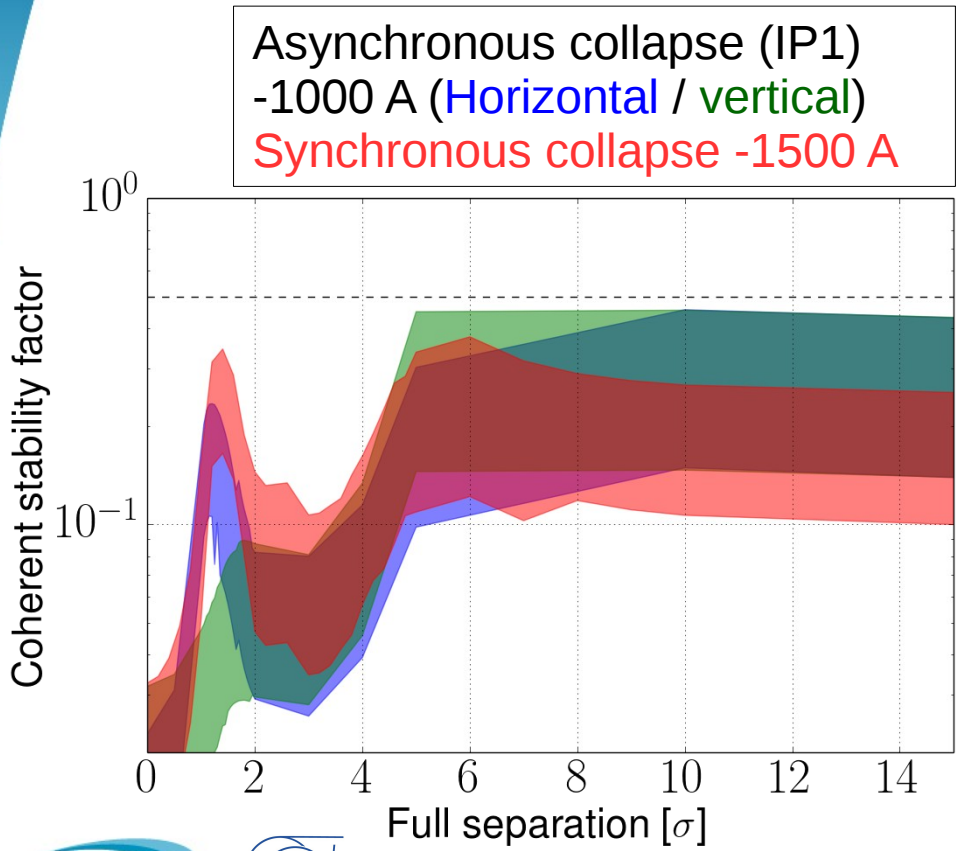
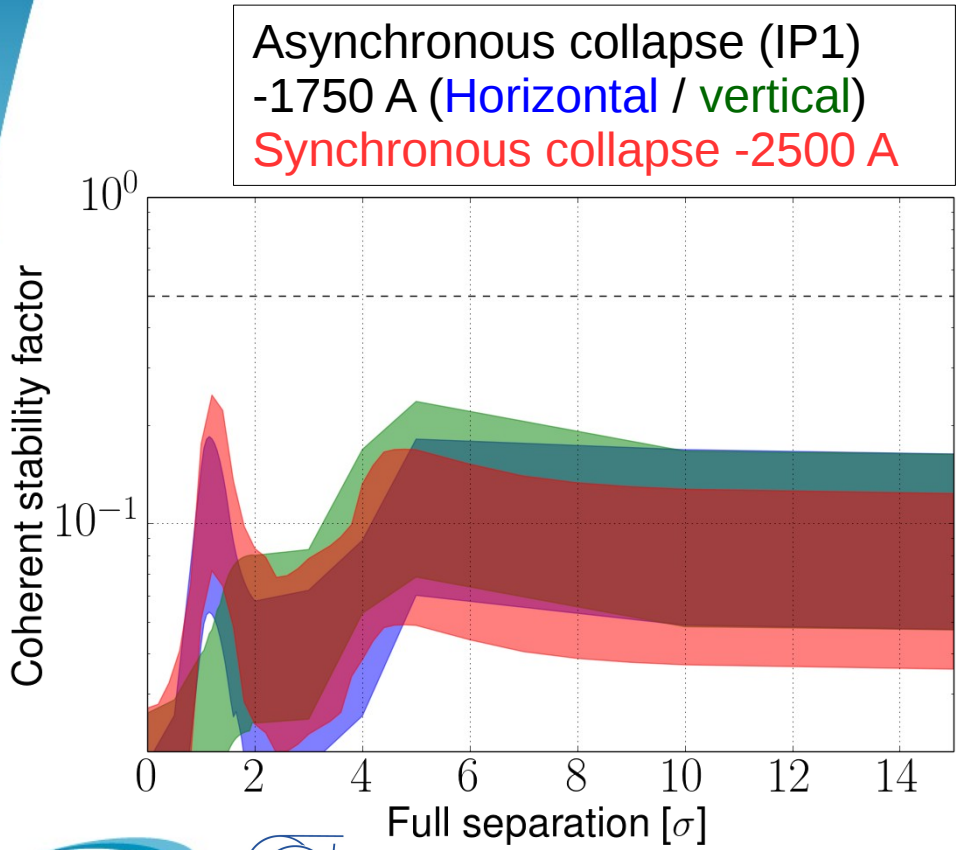
Ultimate BCMS scenario - LS2 collimator upgrade



- With the LS2 collimator upgrade, the tele-index required is reduced from ~2.9 to ~2.2

Ultimate BCMS scenario - no collimator upgrade



- Without collimator upgrade, the tele-index required is reduced from ~3.9 to ~3.0