LHC MD on Landau damping threshold

- Motivation:
  - In the last few weeks lots of beam dumps, due to losses during or after squeeze.
  - One possible candidate for the losses are beam instabilities, due in particular to loss of Landau damping of headtail modes.
  - This is not understood (from the impedance point of view), as we have in the machine much more octupole current than needed according to the model.
  - First step, to understand this: test Landau damping threshold (octupole current) for one single beam (no beam-beam effect), after squeeze.
  - Second step, to find a possible cure: test negative chromaticity (should automatically damp all headtail modes).
  - We would need this as one of the first MDs (to test possible beam-beam effects later in the MD block), plus additional time (16 hours would be the best).

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- Beam conditions:
  - Do 4 fills: one per beam to test, one per sign of the chromaticity.
  - Scan octupole current with one beam only, after squeeze.
  - Intensity as in normal operation (1380 bunches, 1.3-1.4e11 p+/bunch).
  - Tranverse feedback on.
  - Emittances as in normal operation (~2).
  - Energy 4 TeV (after squeeze).
  - Chromaticity: positive (~2) or negative (~ -5).
  - Collimators as in normal operation (no movement).

LHC 1st MD on coupled-bunch instability

- MD plan:
  - After ramp and squeeze: control chromaticity to ~2, set octupoles to +/- 450A (as in normal operation).
  - Reduce octupole current by 10A or 20A steps until losses are observed.
- Redo this for negative chromaticy, then again for the other beam.