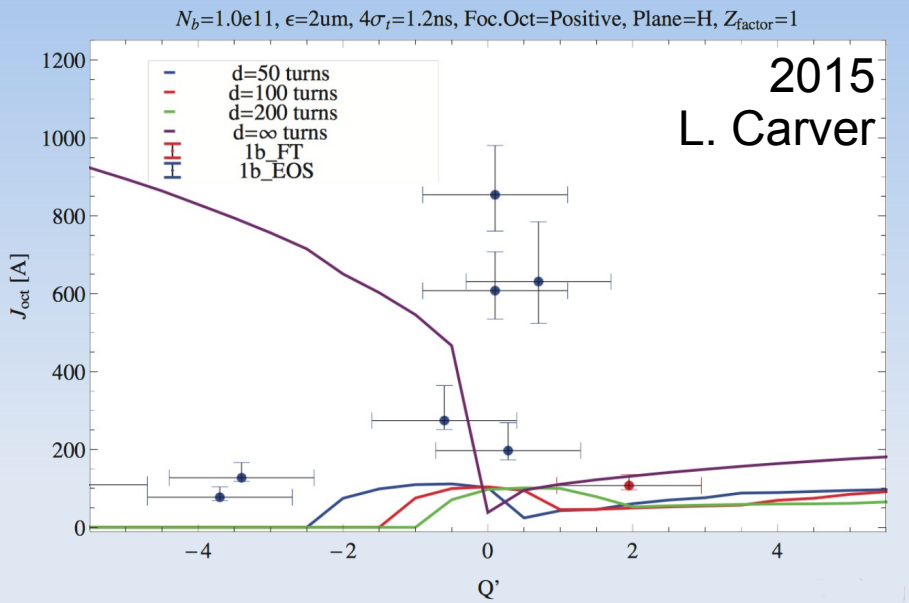
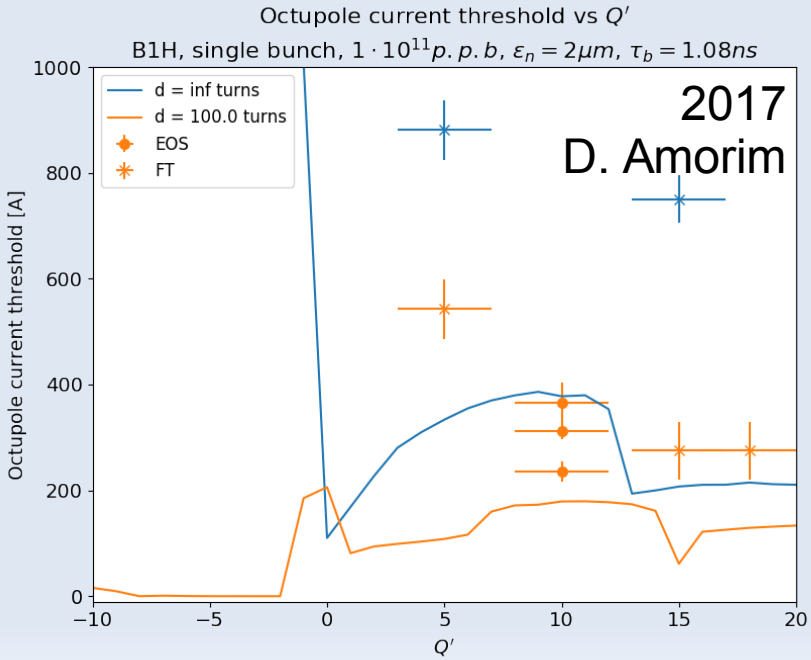
Few simulations of octupole thresholds with damper and quadrupolar wakes

X. Buffat





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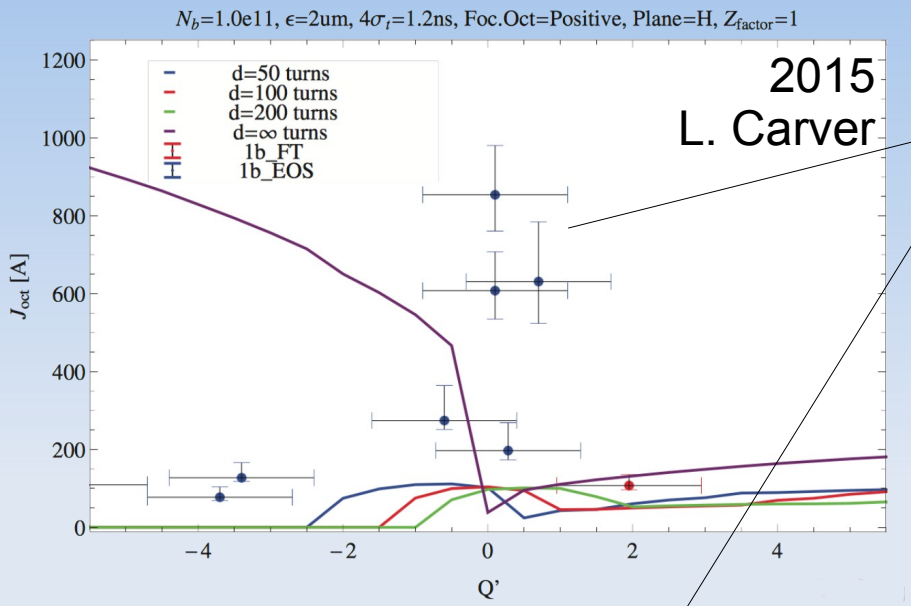

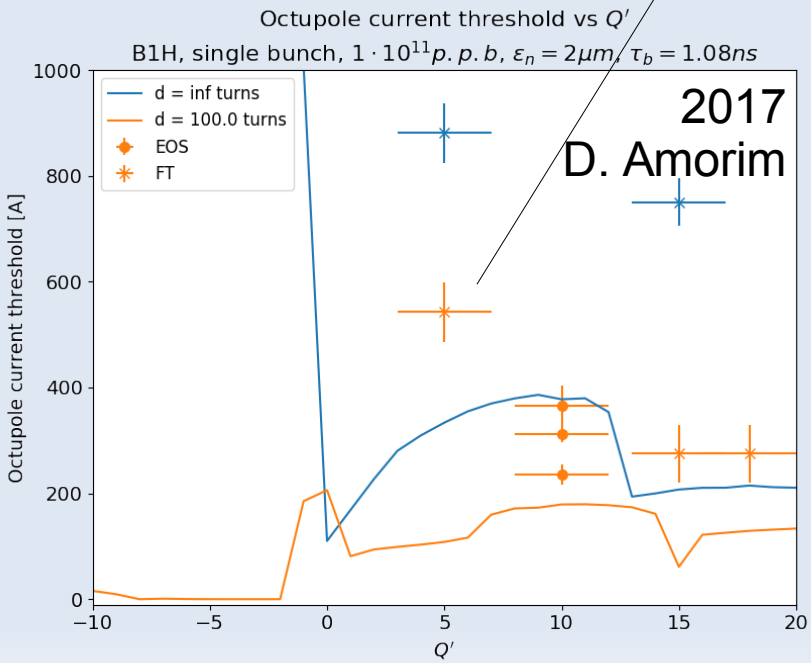

- While a Vlasov solver such as DELPHI computes the modes of oscillations without assumptions on the interaction between modes, the estimation of the strength of Landau damping by comparison with the stability diagram (i.e. the dispersion integral) assumes uncoupled modes
  - Does the coupling between modes introduced by the damper (See. E. Metral, 20.02.2017, D. Amorim 06.03.2017, S. Antipov 26.06.2017) explain the measured discrepancy between the model and measurements at low chromaticity ?

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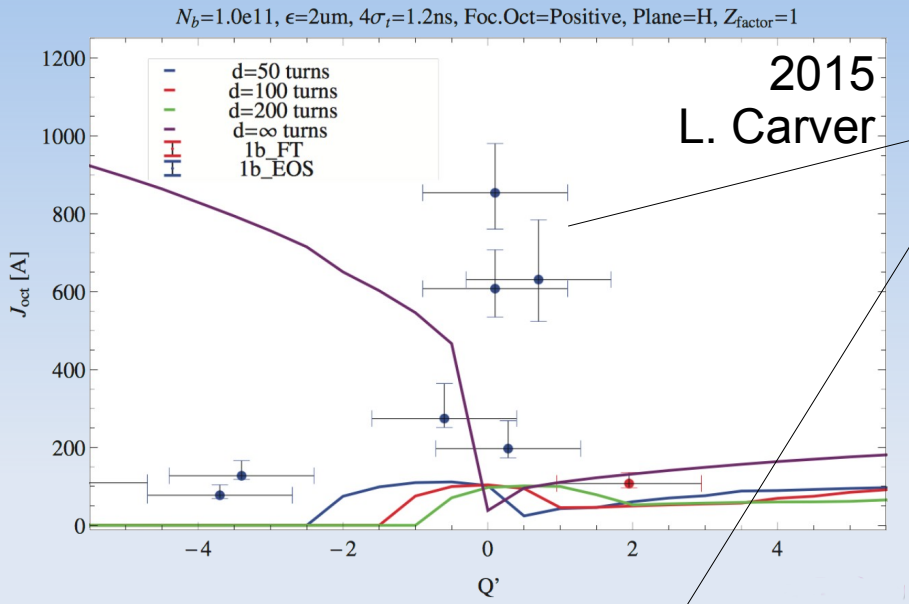

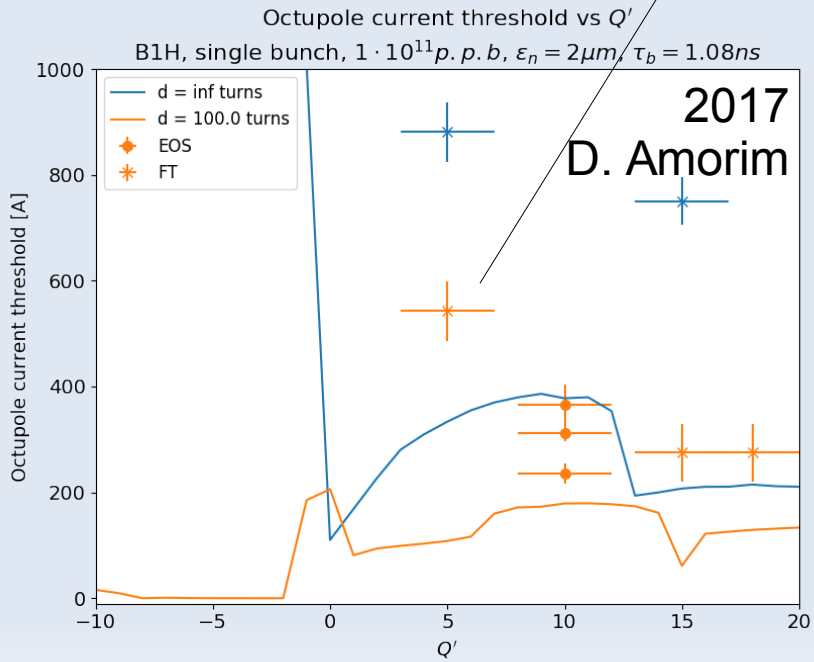

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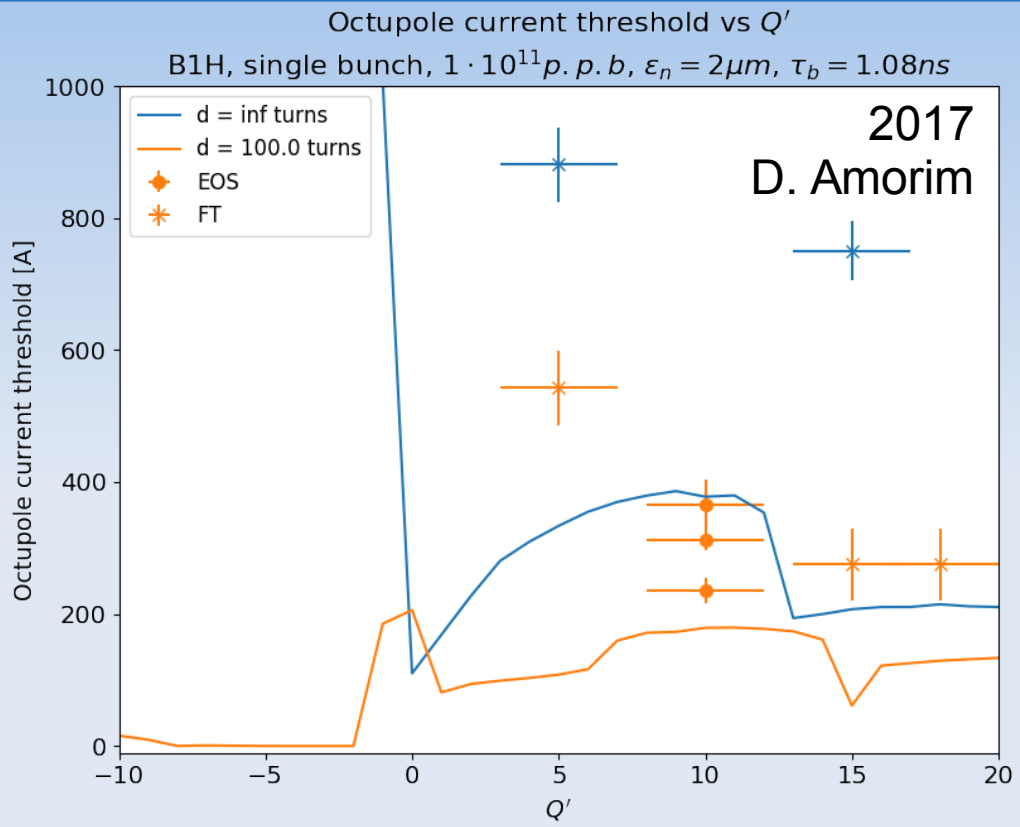
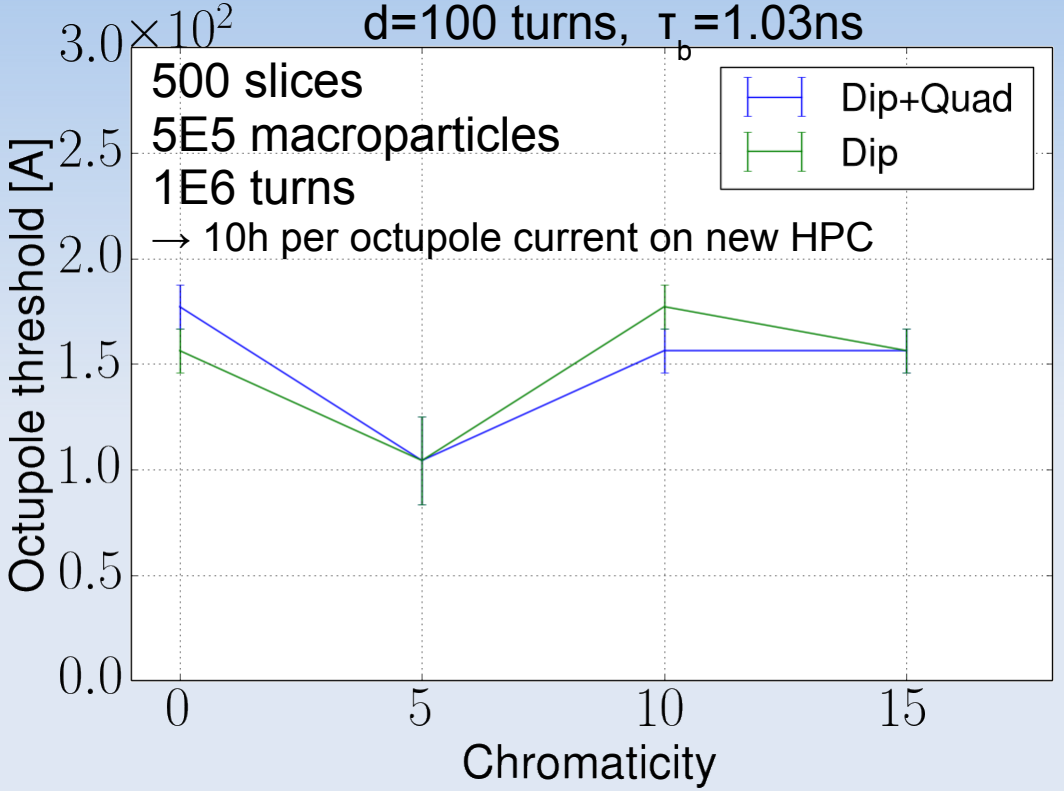
- The quadrupolar impedance is not included in the model
  - Can the quadrupolar wake explain the difference between predicted and measured threshold in 2017 ?

Results





- Very good agreement between COMBI and DELPHI

  → The prediction of the uncoupled modes dispersion integral (assumed by DELHI) seem to remain valid at low chromaticity, with modes coupled through the damper

- The quadrupolar wake seems to have a minor impact on the stability threshold