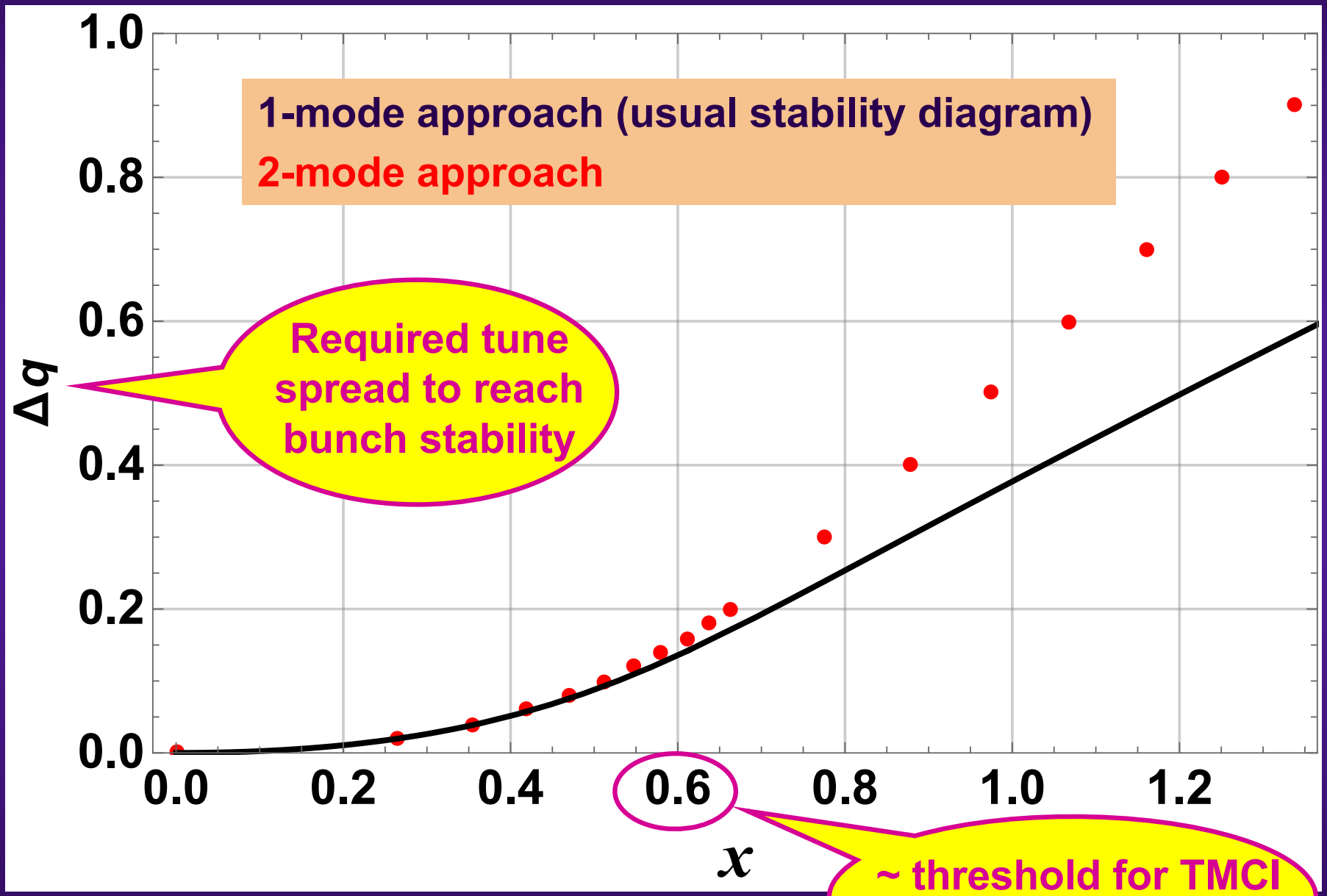
# LANDAU DAMPING WITH DESTABILISING EFFECT OF ADT AND LARGER IMPEDANCE THAN EXPECTED (with two-mode model)

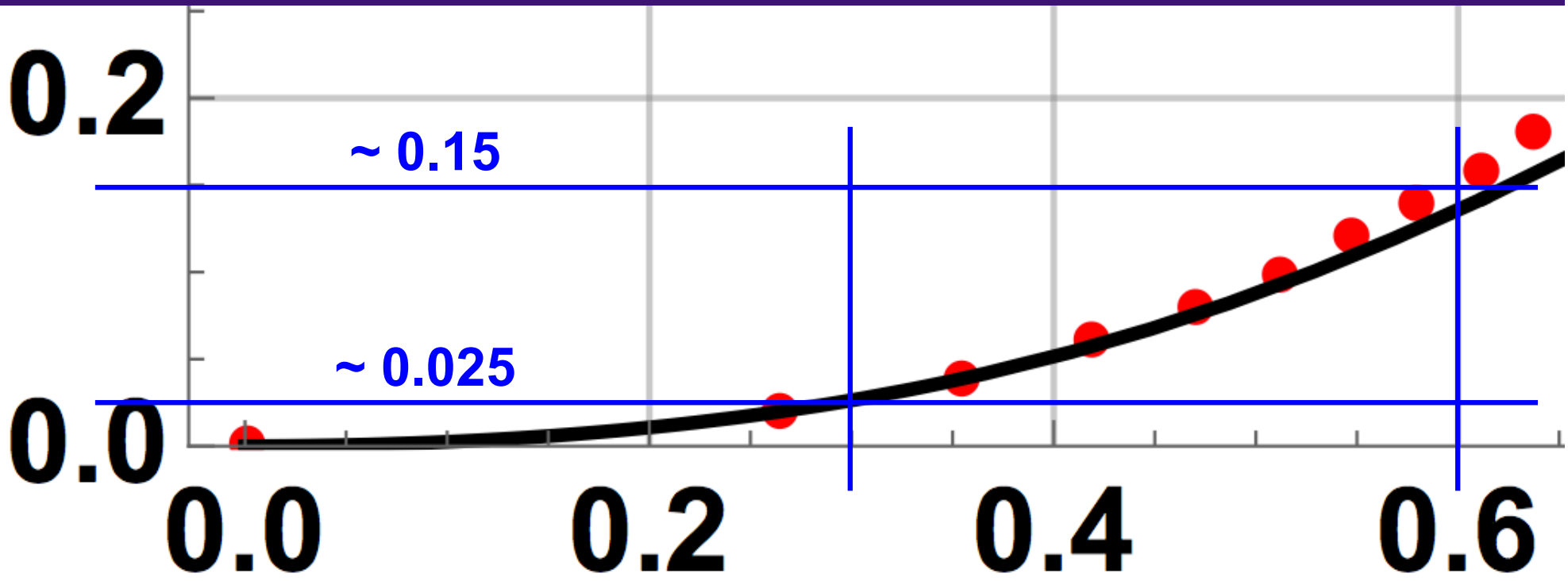
**E. Métral**

- **See IPAC18 paper (http://accelconf.web.cern.ch/AccelConf/ipac2018/papers/thpaf048.pdf)**

# IPAC18 PAPER

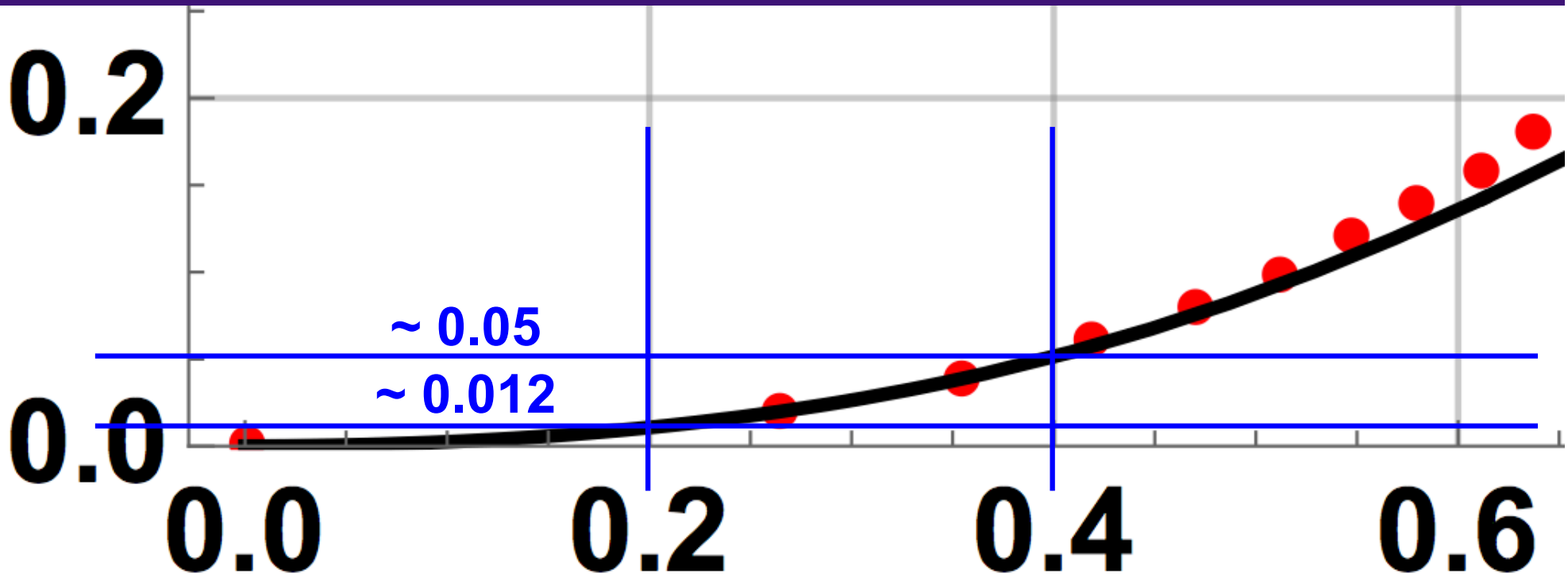


# Assuming we are running at a factor ~ 2 below TMCI but the impedance is ~ 2 times higher than predicted




~ 0.15 / ~ 0.025 ≈ 6

# Assuming we are running at a factor ~ 3 below TMCI but the impedance is ~ 2 times higher than predicted




~ 0.05 / ~ 0.0212 ≈ 4

# CONCLUSION

- Assuming that we are running at a factor ~ 2 (~ 3) below TMCI (for Q' = 0) with ADT, the simple model described in the IPAC18 paper predicts a certain tune spread to reach bunch stability => $\Delta q \approx 0.025$ ($\Delta q \approx 0.012$)

- However, if the impedance is ~ 2 times higher, the required tune spread is a factor ~ 6 (~ 4) higher!

- Next: to be checked…