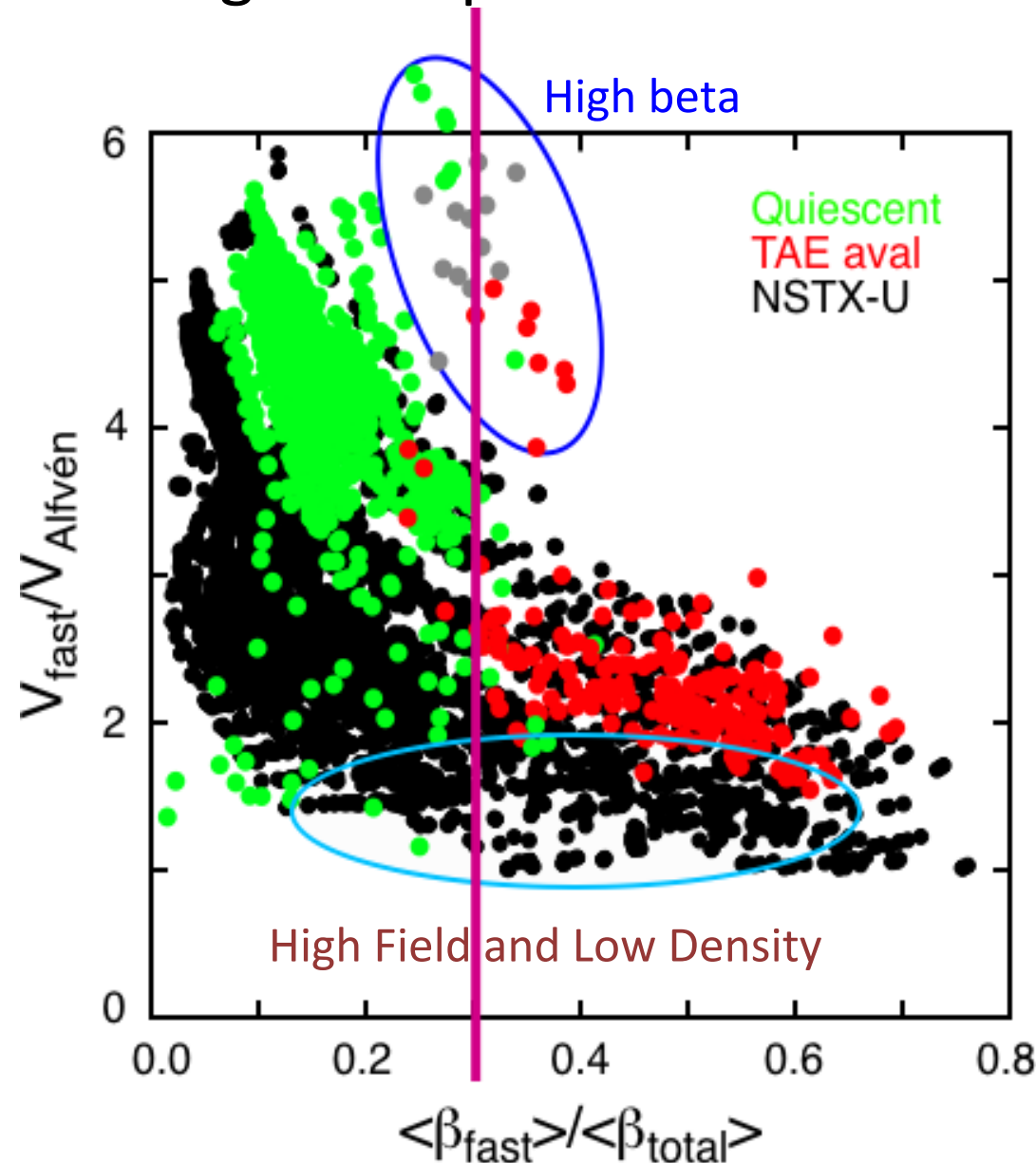


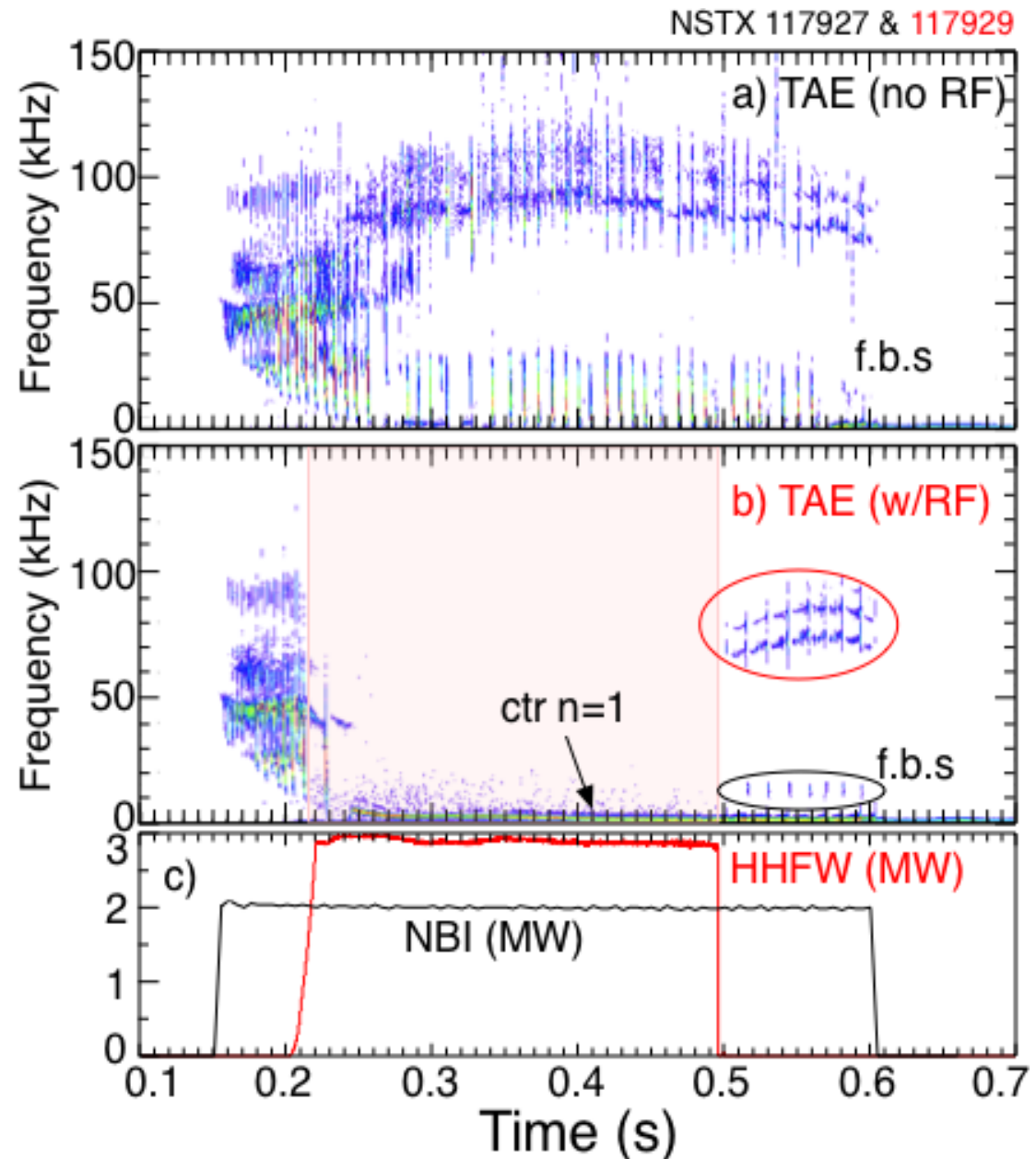
1. Extend TAE Avalanche range

- Present database has very little range of dependence on $V_{\text{fast}}/V_{\text{Alfvén}}$.
- Revisit low field, high density regime (high beta).
- Extend operation to high-field, low density.
- Why does avalanching threshold depend on $\langle\beta_{\text{fast}}\rangle/\langle\beta_{\text{total}}\rangle$;
 - what other normalization might work better?



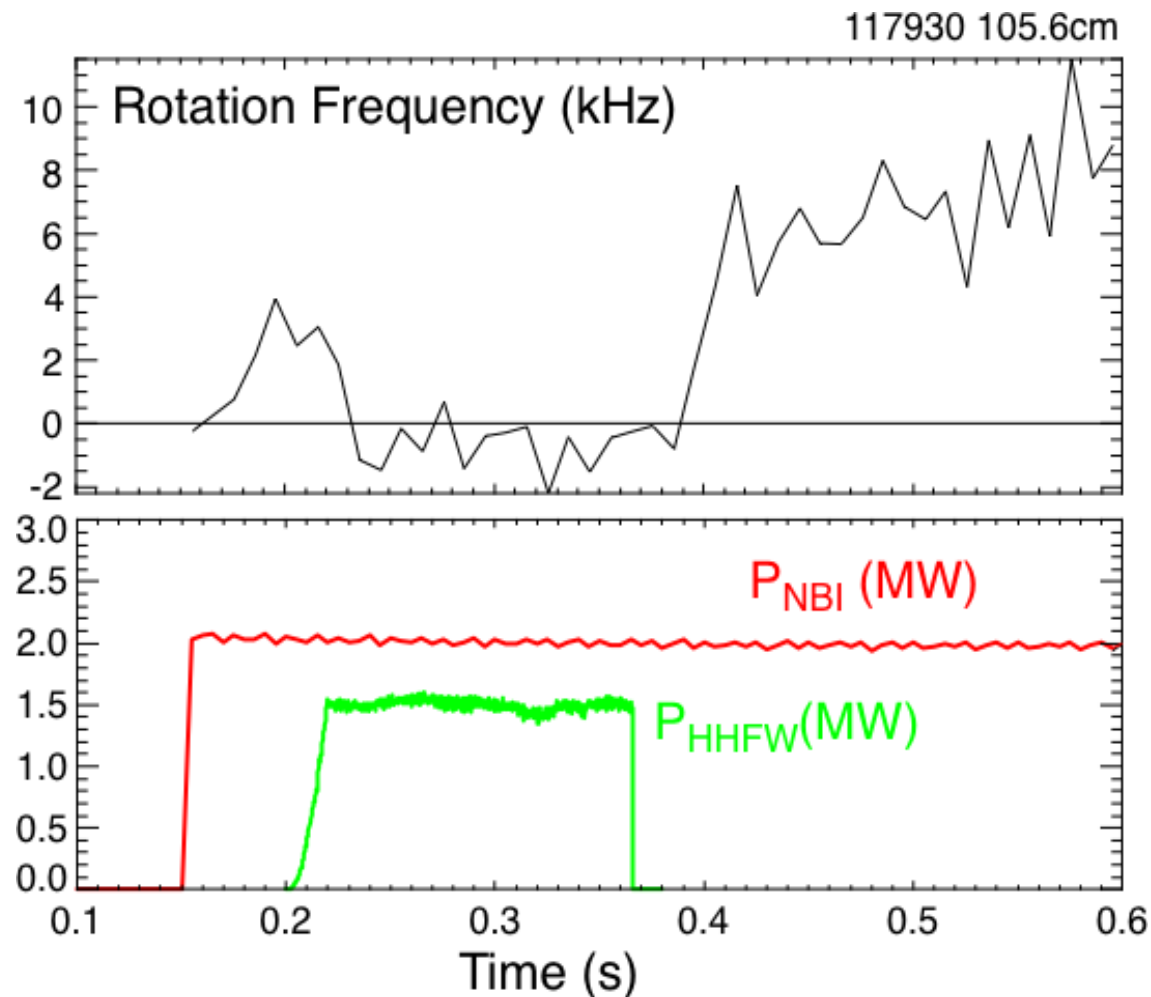
2. Study scaling of HHFW *AE suppression

- Start with same 300kA, Helium targets.
- Reproduce in Deuterium targets.
- Increase current until affect is gone.
- Try similar with more beam power – contingent on finding conditions which can handle higher beam power.



3. Use rotation to study TAE interaction with continuum

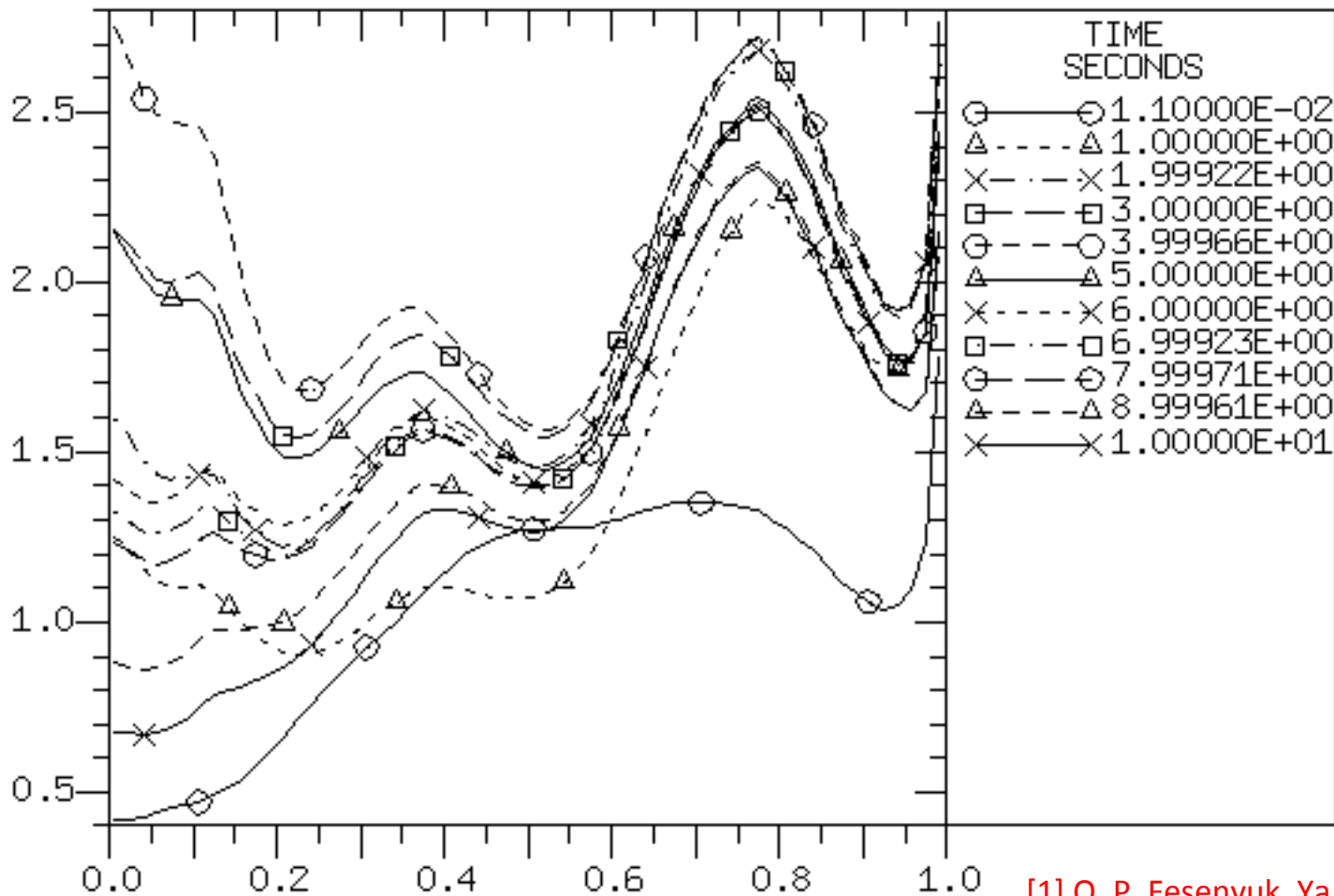
- Interaction of TAE with continuum should add more damping, but no experimental evidence so far.
- Modest RF power can strongly affect rotation.
- Investigate scaling of RF rotation damping and affect on TAE.
- Complement RF-rotation control with error-field rotation control scaling.



4. TAE with high β , high q

- Character of TAE should change [1,2] when $q^2\beta > 1$ ($\gg 1$?).
- Possibly, high-inductive fraction discharges might get there.

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100% Non-Inductive Current Scenarios at 0.75 T

Q*Q*BTTOT (computed) VS. X

[1] O. P. Fesenyuk, Ya. I. Kolesnichenko, Yu. V. Yakovenko, Plasma Phys. Control. Fusion **54** (2012) 085014.

[2] O. P. Fesenyuk, Ya. I. Kolesnichenko, Yu. V. Yakovenko, Phys. Plasmas **20** (2013) 122503.

5. Initial excitation of TAE with coil?

- Passive studies to measure coupling to natural TAE
- Low power excitation to measure antenna loading?
- Initial high power (2 kW) excitation?

