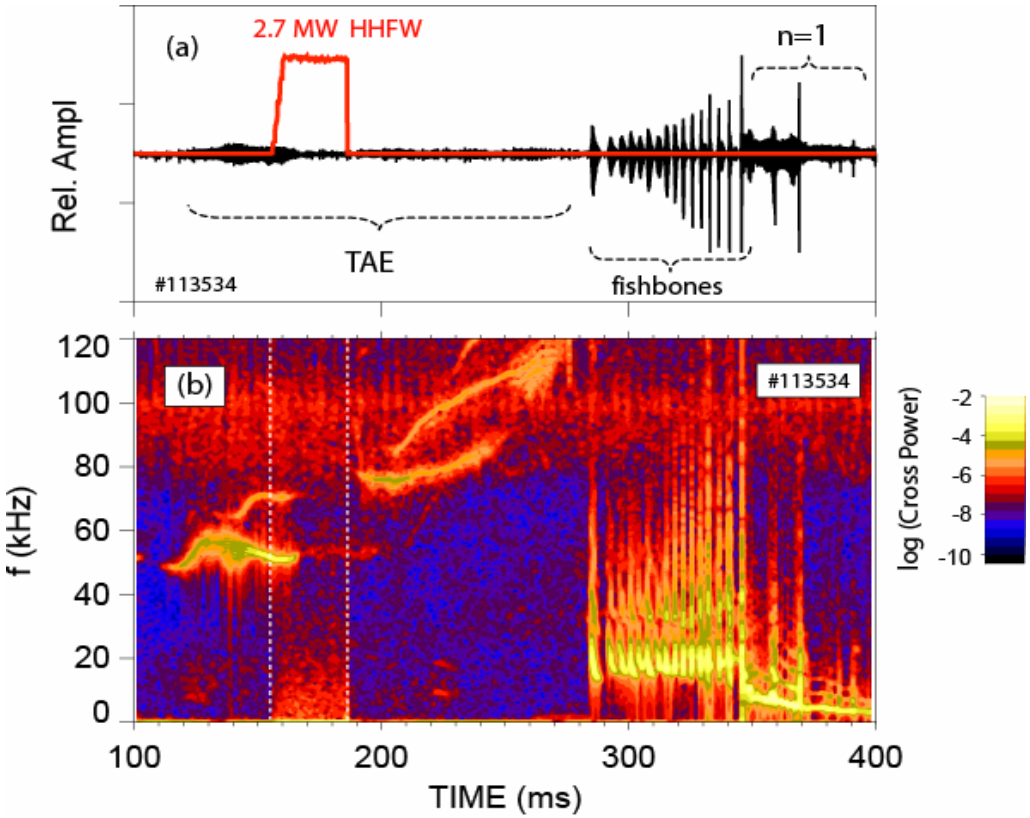
Effect of HHFW on Rapidly Chirping Modes: The Sequel



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Berk-Breizman model

- Chirping is caused by holes & clumps that propagate in phase space--resonant ions are trapped in the instability wave field
- Increased pitch-angle scattering knocks ions out of resonance, suppressing chirping.
- Berk-Breizman model consistent with several experiments

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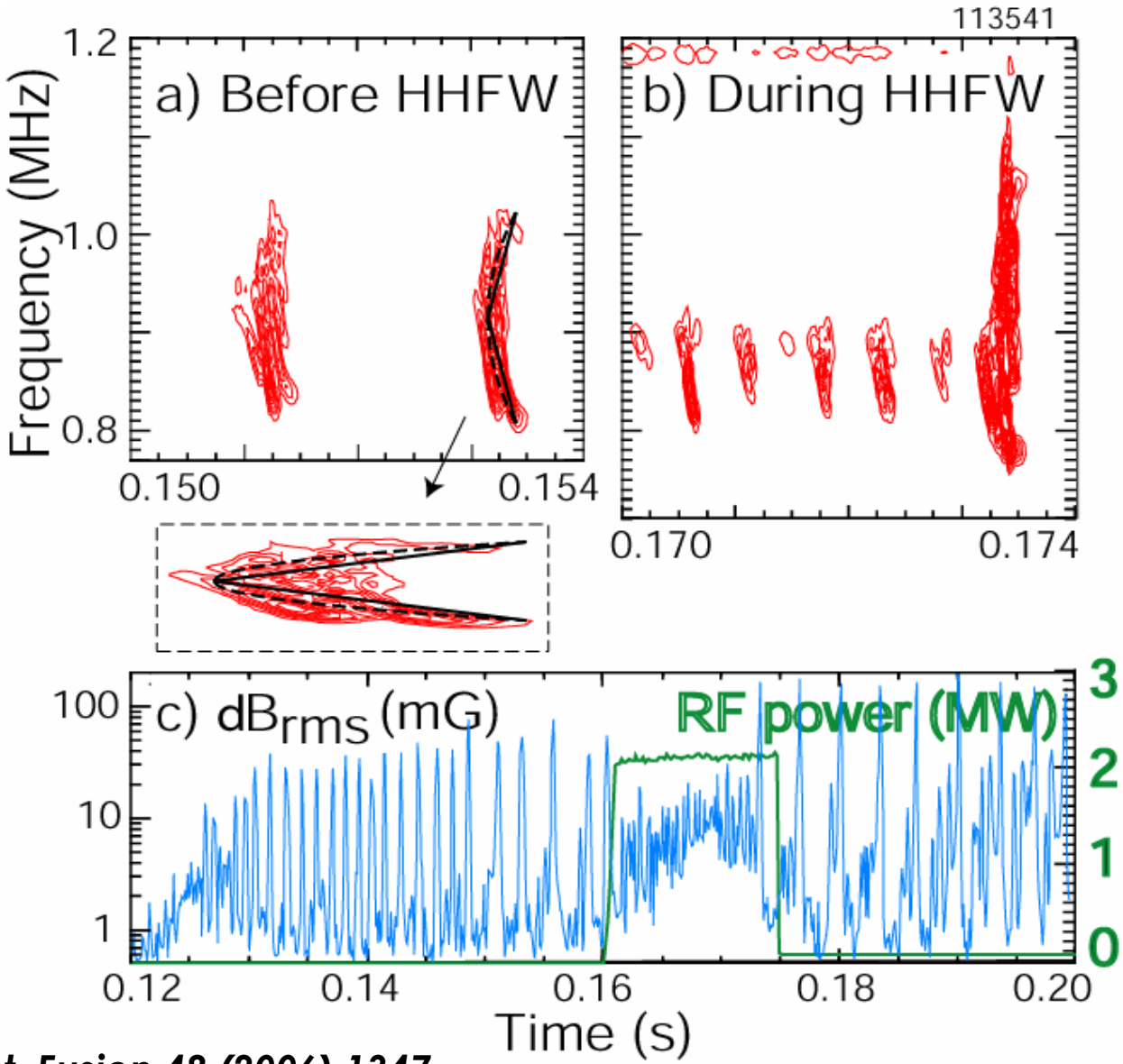
HHFW Effect on Angelfish in previous experiment



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Conclusions of Previous Experiment & Reasons for an Encore

- HHFW did not suppress chirping of fishbones
- Changed TAEs on slow timescale but did not suppress chirping
- Probably altered CAE/GAE chirps (limited data)
- Need better insight into a) part of phase space that drives instabilities & b) effect of HHFW in phase space → Better eigenfunction & fast-ion diagnostics

- FIDA can measure HHFW fast-ion absorption profile
- Reflectometer can measure mode structure