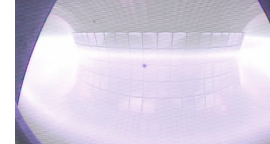


Debriefing F18: Runaway electrons

FTU Experimental Day: 2019-C1-B- 21-25-27 Giugno

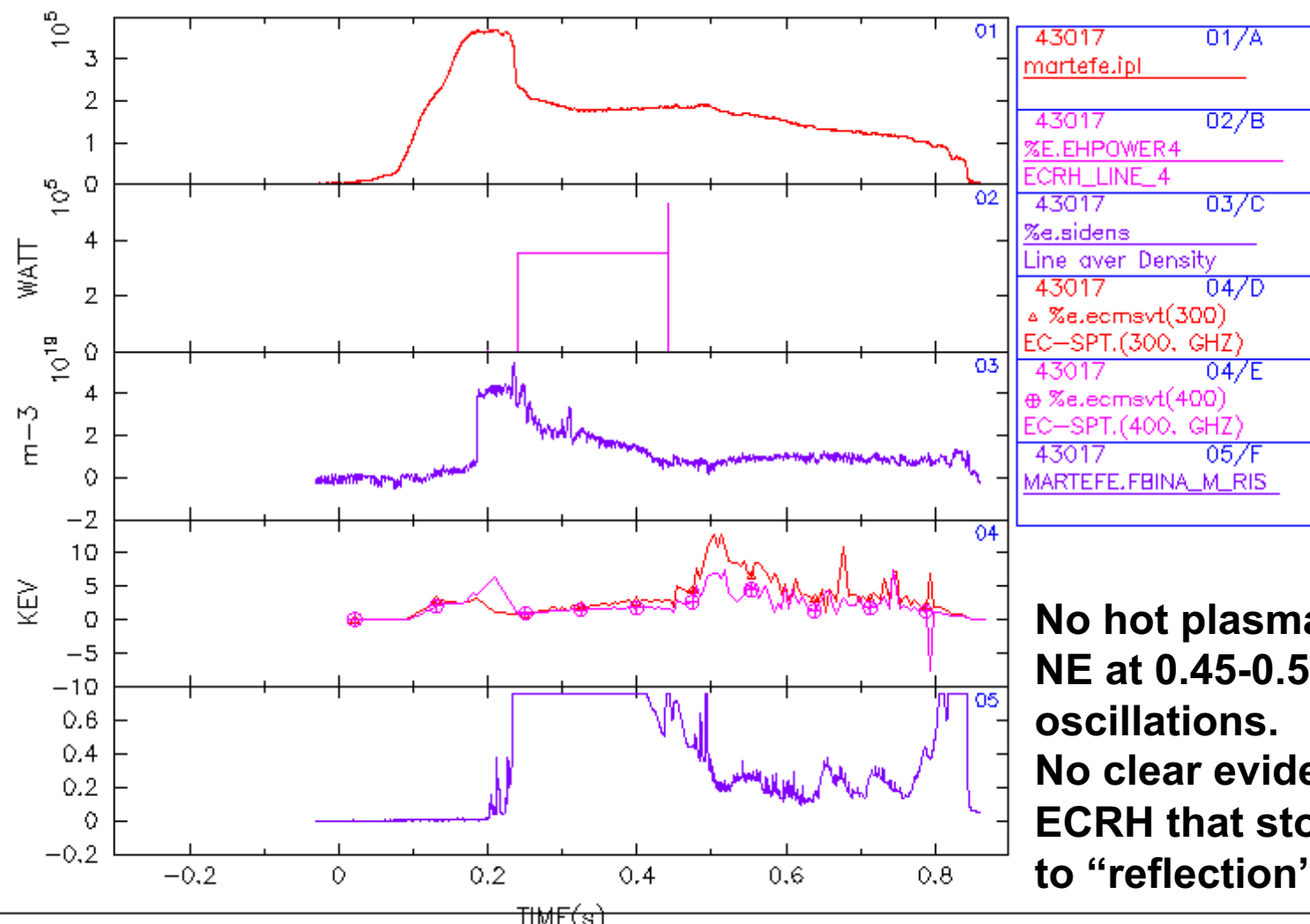
ENEA and TOR VERGATA teams





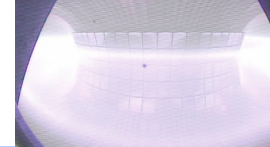
ECRH on RE beams: 43017

New recipe (no comm.): steepest lp ramp and small pellet at 0.18s.

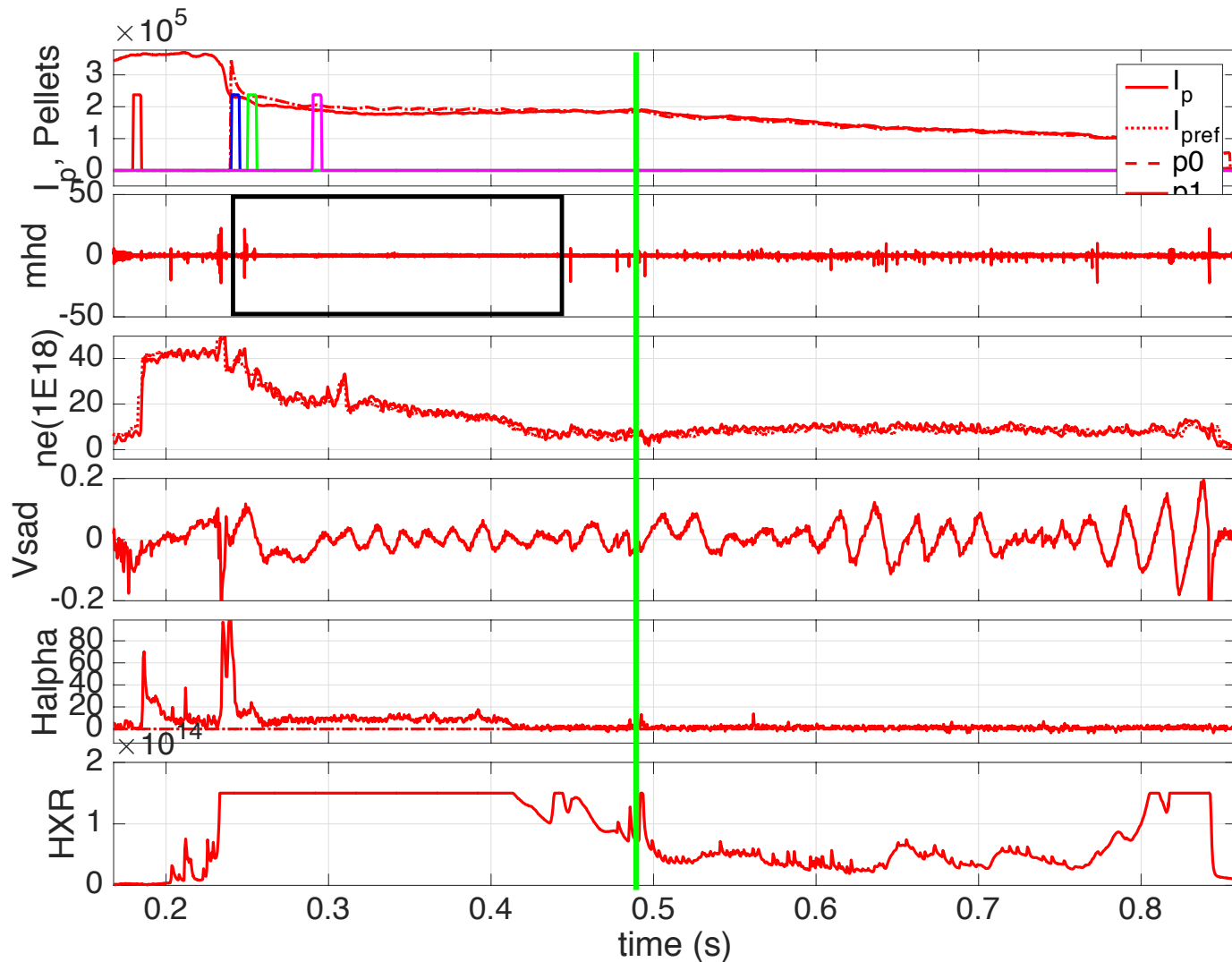


No hot plasma?
NE at 0.45-0.5s + Vloop
oscillations.
No clear evidence of
ECRH that stops due
to “reflection”.

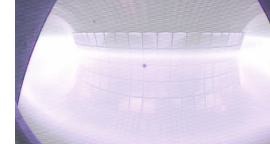
ECRH on RE beams: 43017



New recipe (no comm.): steepest I_p ramp and small pellet at 0.18s.

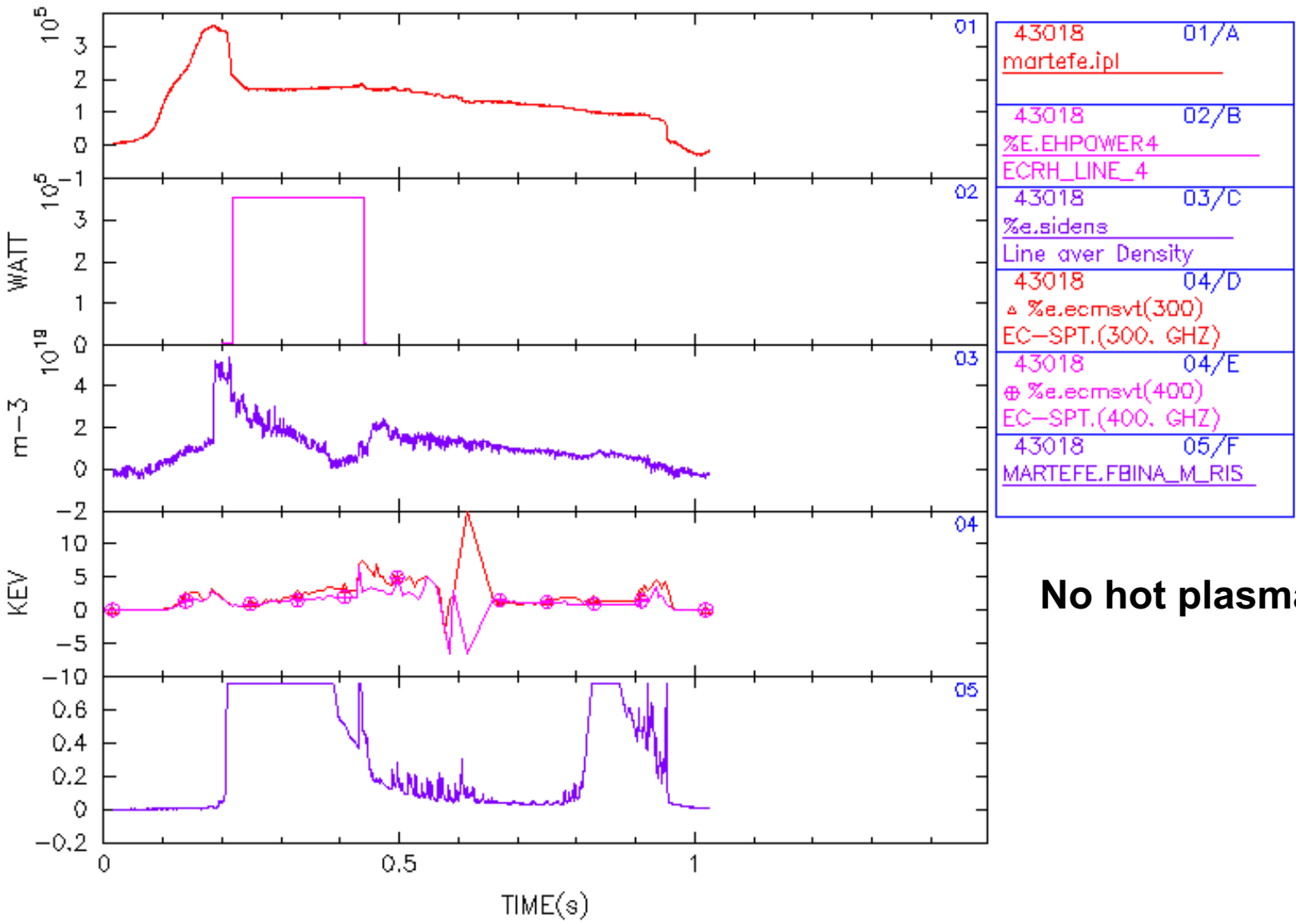


NE at 0.45-0.5s +
Vloop
oscillations.



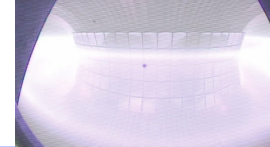
ECRH on RE beams: 43018

New recipe (no comm.): steepest lp ramp and small pellet at 0.18s.



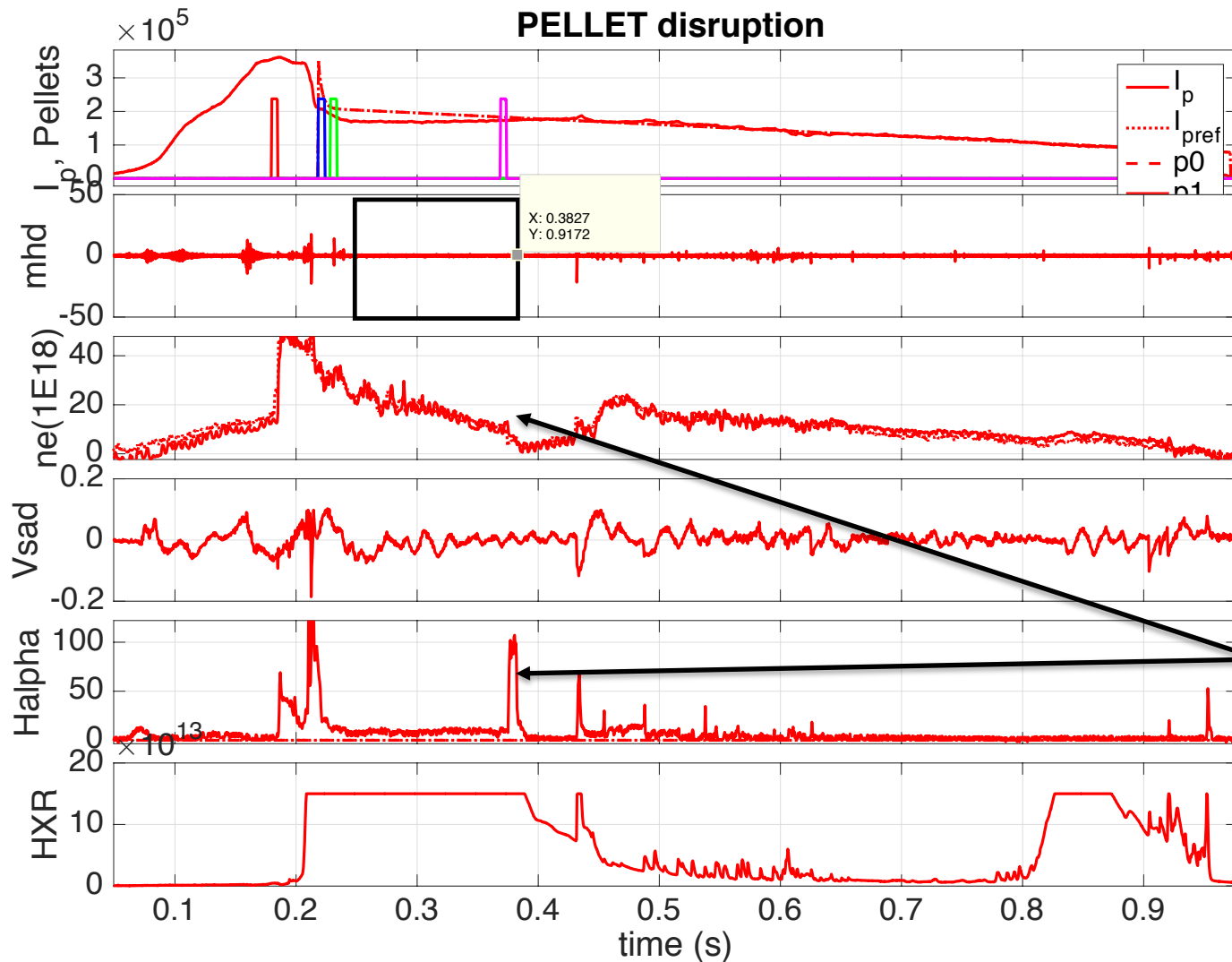
No hot plasma ?

ECRH on RE beams: 43018



New recipe (no comm.): steepest I_p ramp and small pellet at 0.18s.

PELLET disruption



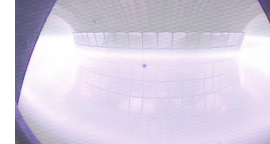
No hot plasma?

ECRH that stops due to "reflection".

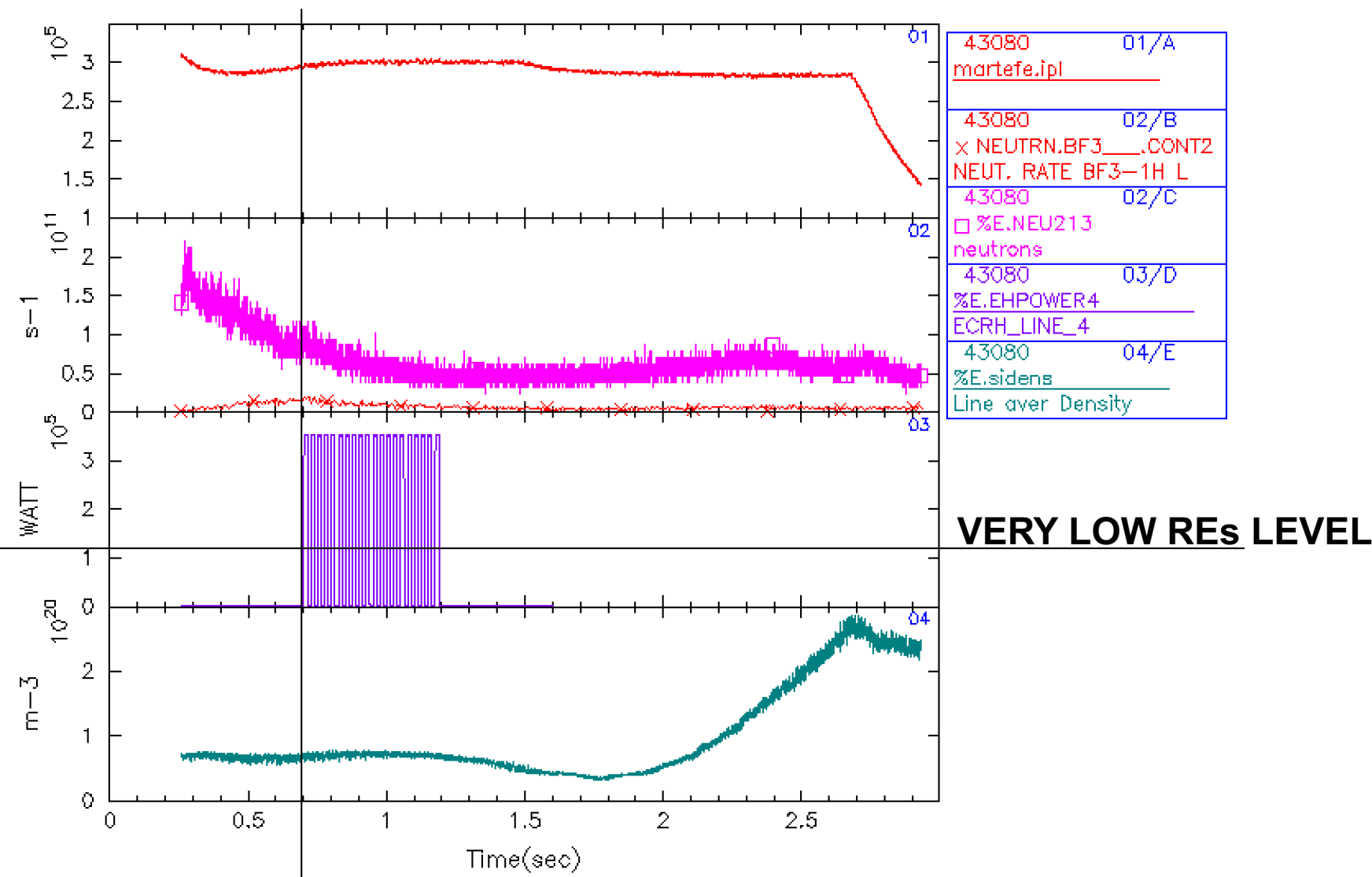
Pellet induces n_e drop: there ECRH begins failing.

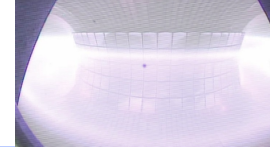
More power needed?

ECRH on quiescent REs



LOW REs level, no signs of synchrotron emissions on the visible camera





ECRH on beam: unclear results (continuous ECRH)

- PWM on RE beam
- Shift ECRH (250ms after CQ)
- Change injection (poloidal) angle?
- Double gyrotrons
- ECRH, D puffs, increase the current reference to analyze the fraction of flux absorbed by “cold” and REs

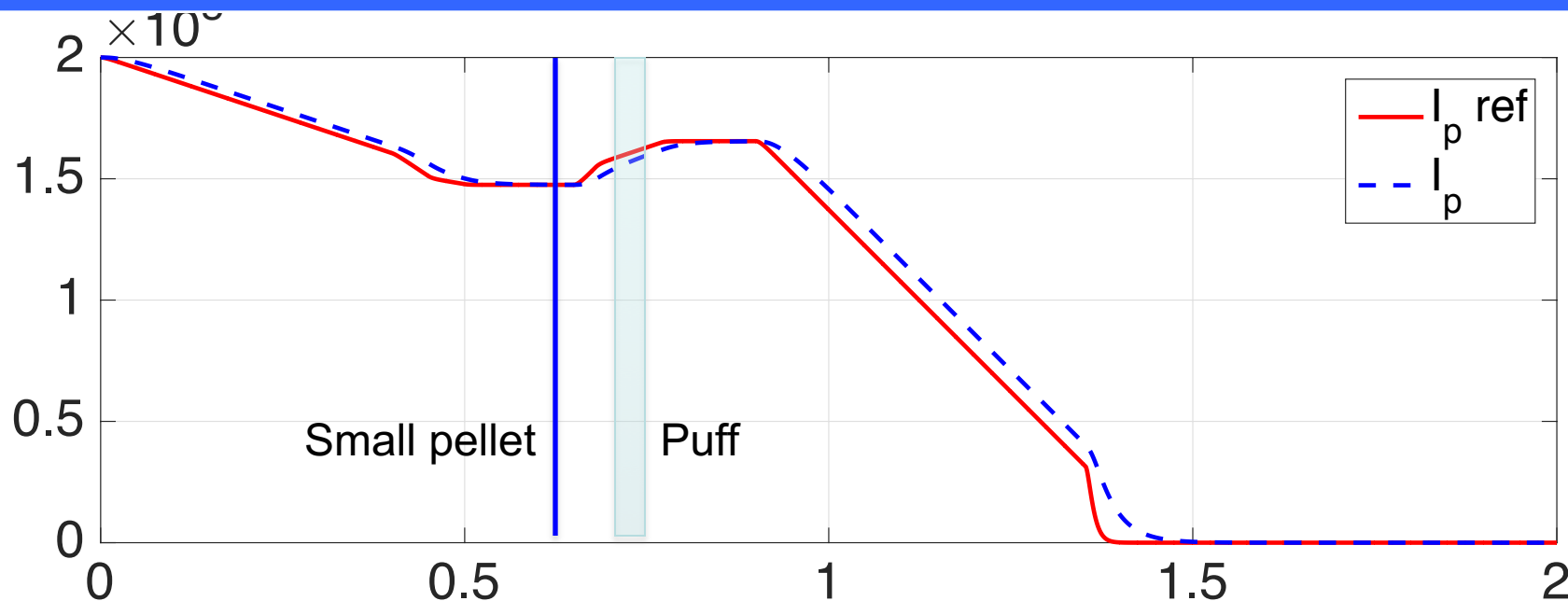
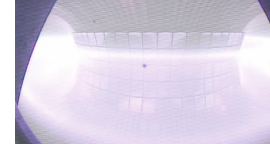
RE beam: pellets/D to see delayed instabilities

ECRH on quiescent REs: Larger REs population needed (short)

RE generation and suppression: long discharges.

New (slow) radial control and current reference to be tested on RE beams.

RE beams: restart the discharge



- New I_p reference triggered at runaway plateau/soft-stop
- HXR level considered
- Forced ramp-down before the end of the discharge
- Rate of I_p reference fixed within a range of I_T
- Forced ramp-down when current is below a given level (60kA)