Update MBHA-001
2020-03-11

TE-MSC-TF

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E. Ravaioli, J. Ludwin, M. Bednarek, J. Steckert, S. Haas

Acknowledgements to all involved.

Tests since last meeting

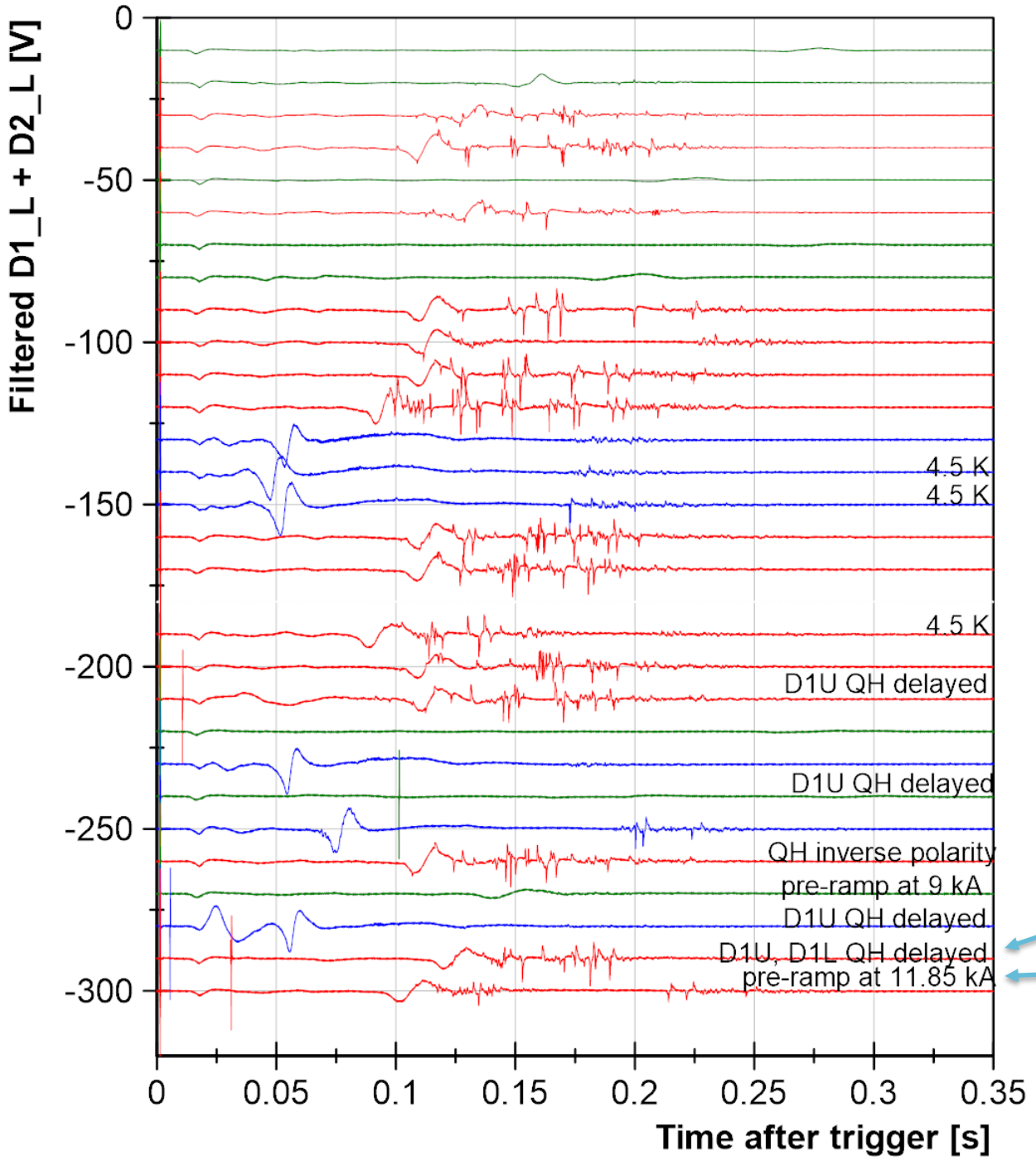
Done:

- Discharge at 11.85 kA, D1U QH delayed 5 ms
- Discharge at 9 kA, D1 QH delayed 30 ms
- Pre-ramp to 11.85 kA, discharge at 9 kA

To be done during the meeting:

- Discharge at 9 kA, D2 QH delayed 30 ms

Summary of discharges so far



25/11/2019 11:18:00 at 6 kA
25/11/2019 14:28:00 at 7.8 kA
25/11/2019 17:38:00 at 8.5 kA
25/11/2019 20:08:00 at 9.1 kA
26/11/2019 06:54:00 at 6.8 kA
26/11/2019 10:25:00 at 8.5 kA
21/02/2020 13:26:00 at 6 kA
21/02/2020 16:43:00 at 7.1 kA
24/02/2020 10:06:00 at 9 kA
24/02/2020 17:12:00 at 9 kA
24/02/2020 20:15:00 at 9 kA
25/02/2020 09:26:00 at 9.7 kA
25/02/2020 13:22:00 at 11.9 kA
25/02/2020 16:08:00 at 11.6 kA
25/02/2020 18:05:00 at 11.3 kA
26/02/2020 13:29:00 at 9 kA
26/02/2020 16:48:00 at 9 kA
28/02/2020 11:42:00 at 9 kA
28/02/2020 16:47:00 at 9 kA
03/03/2020 19:56:00 at 9 kA
04/03/2020 17:35:00 at 9 kA
05/03/2020 12:43:00 at 6 kA
05/03/2020 17:40:00 at 11.9 kA
06/03/2020 12:39:00 at 6 kA
06/03/2020 17:24:00 at 10.5 kA
09/03/2020 16:36:00 at 9 kA
09/03/2020 19:34:00 at 7.8 kA
10/03/2020 11:09:00 at 11.9 kA
10/03/2020 15:03:00 at 9 kA
10/03/2020 18:03:00 at 9 kA

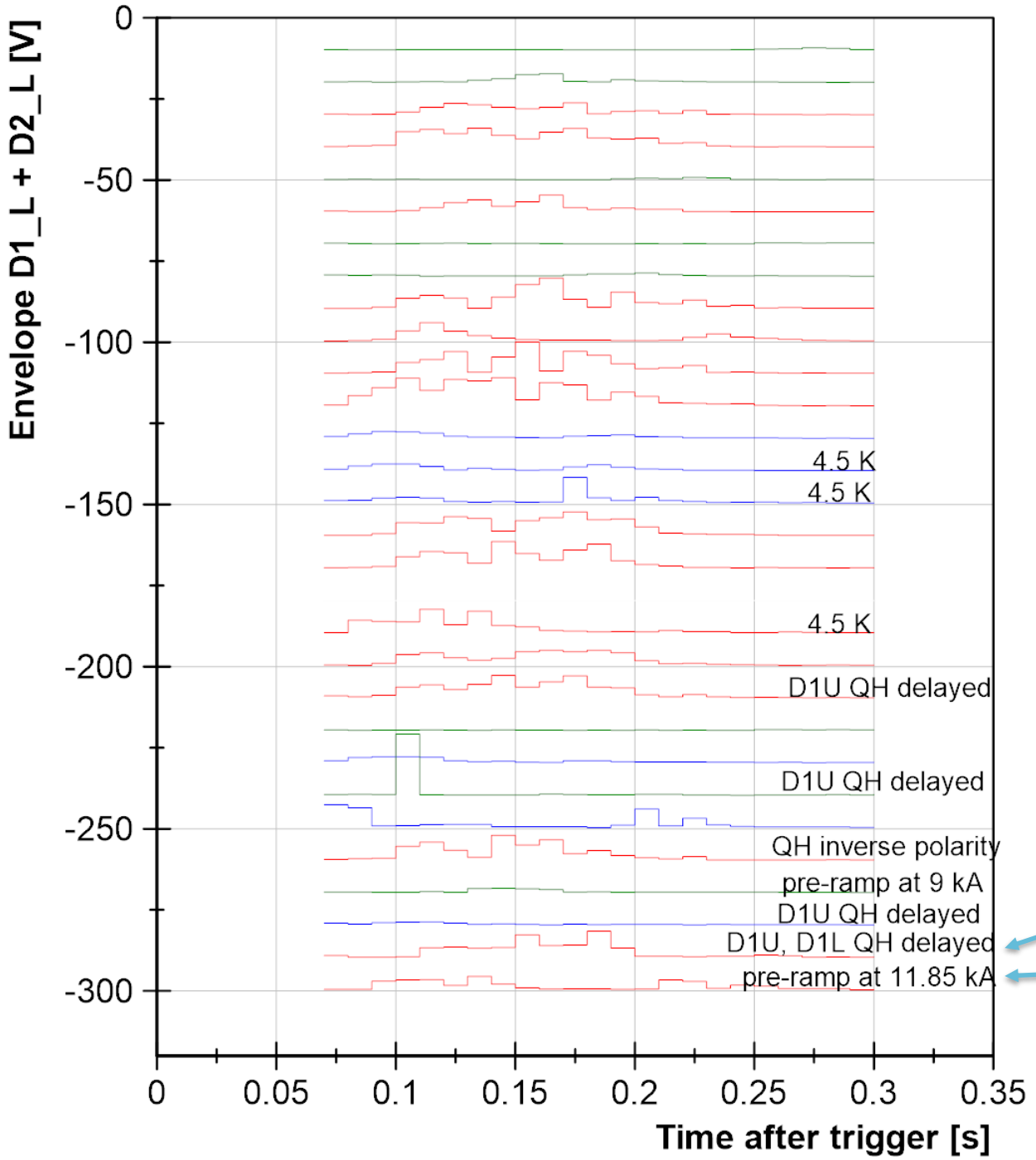
Color code:

- I < 8 kA
- 8 kA < I < 10 kA
- I > 10 kA

9 kA with D1 QH delayed: bump and spikes a bit later

9 kA with pre-ramp to 11.5 kA: quite different signature

Summary of discharges so far



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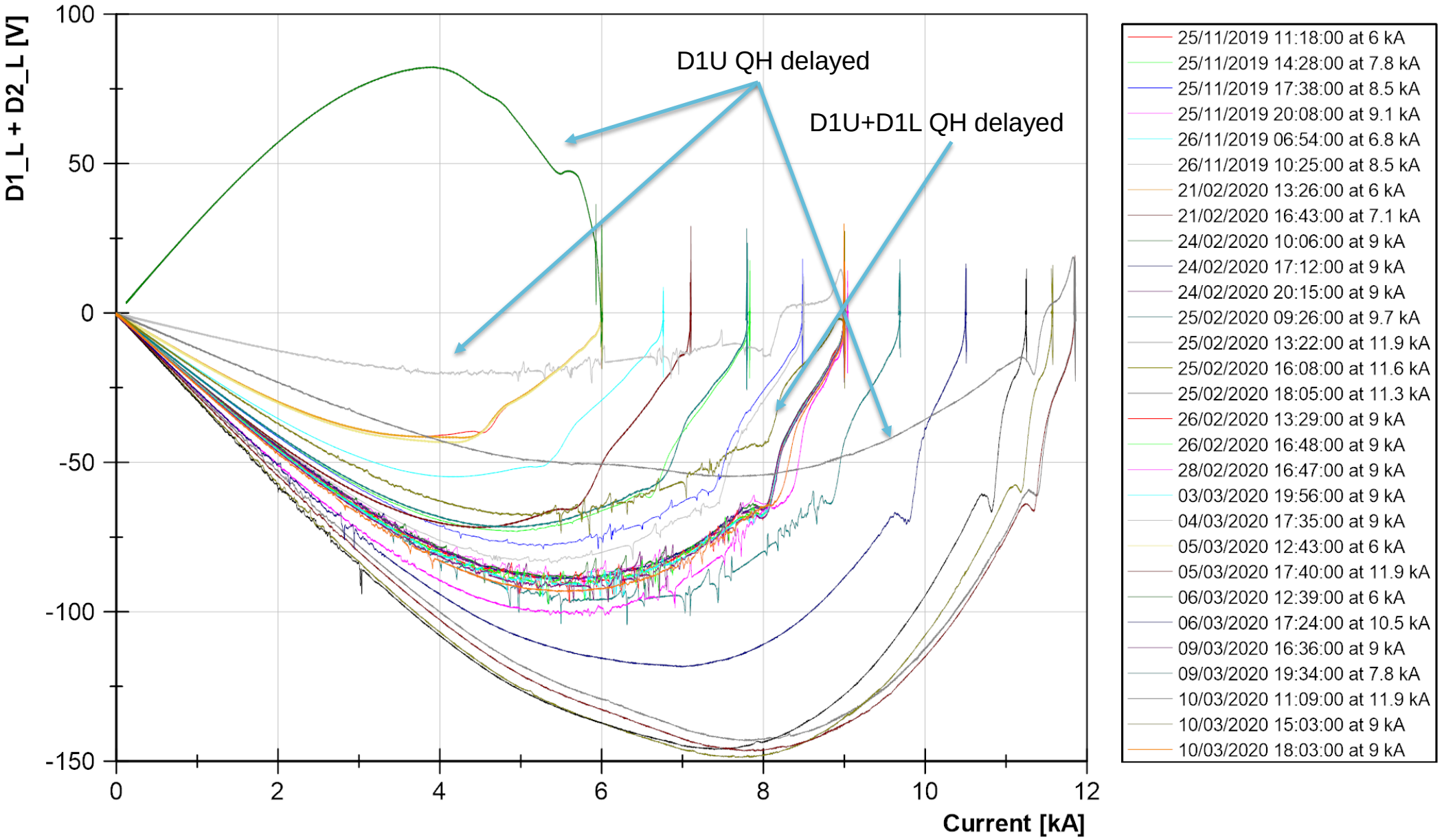
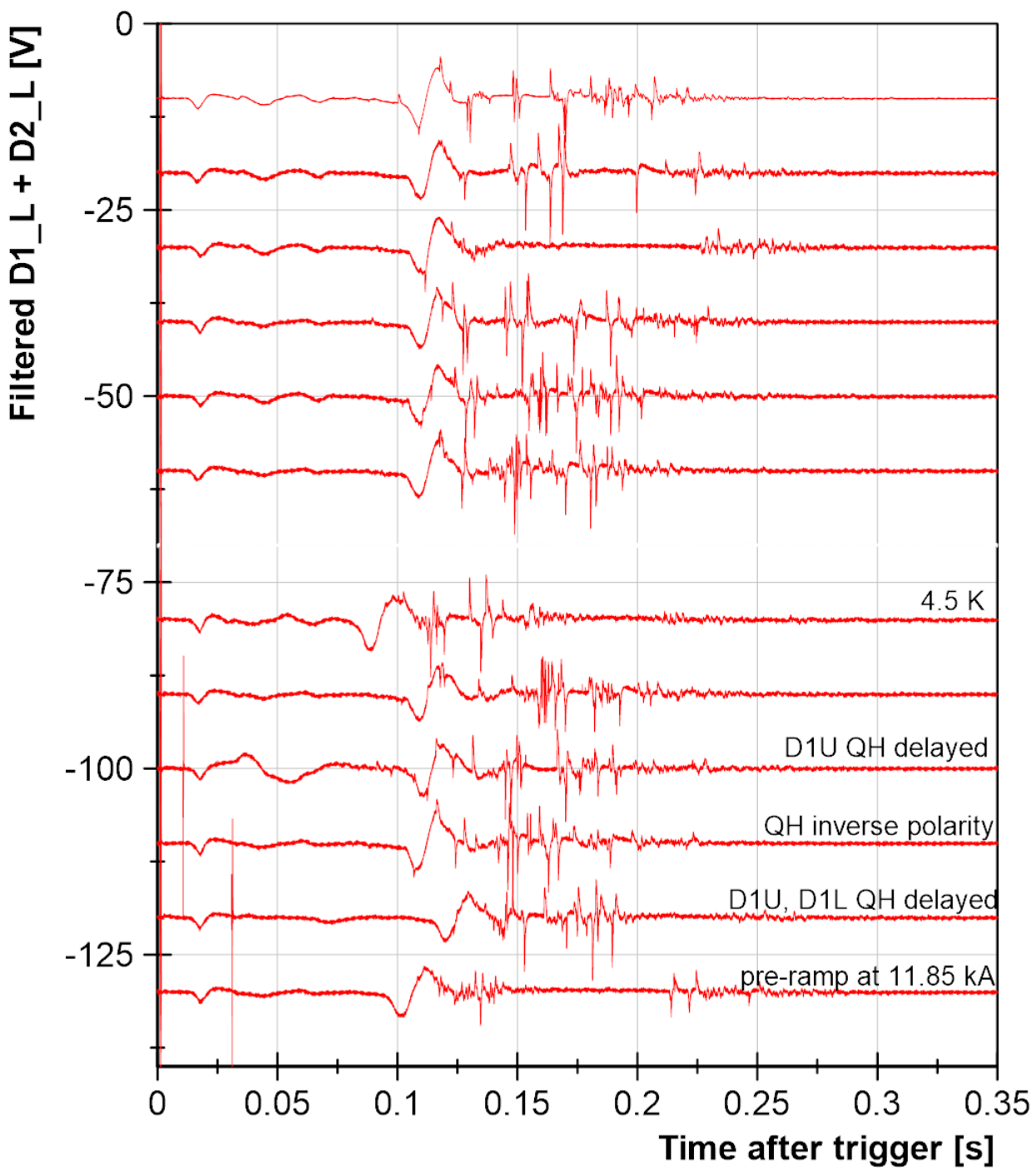
9 kA with D1 QH delayed: bump and spikes a bit later

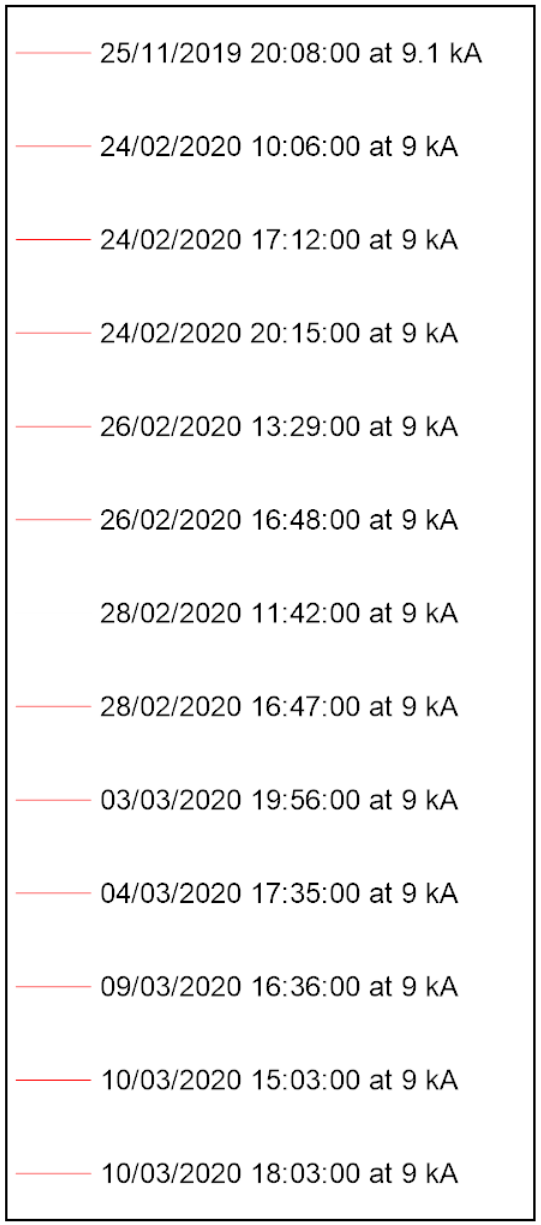
9 kA with pre-ramp to 11.5 kA: quite different signature

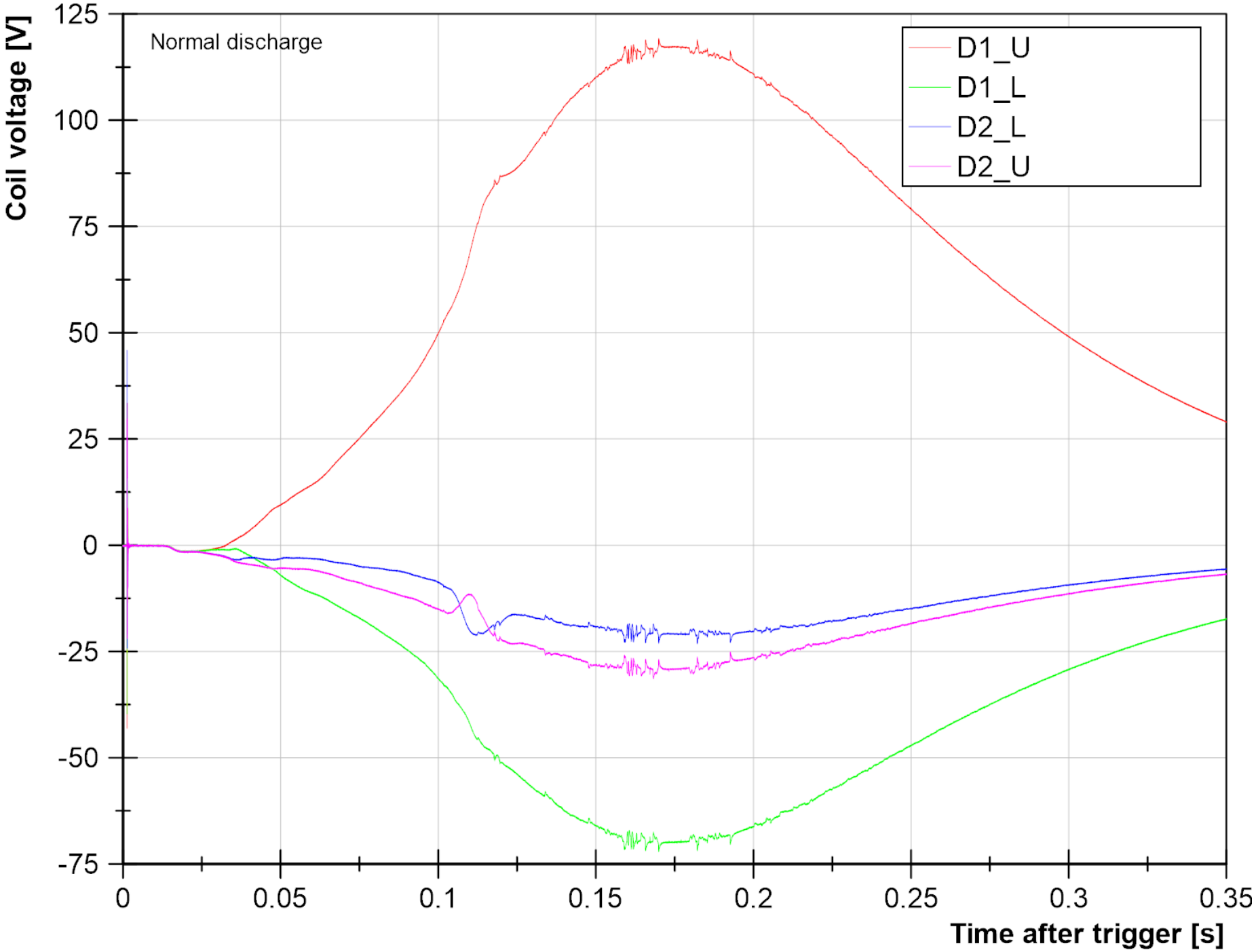
Suspected short voltage vs current



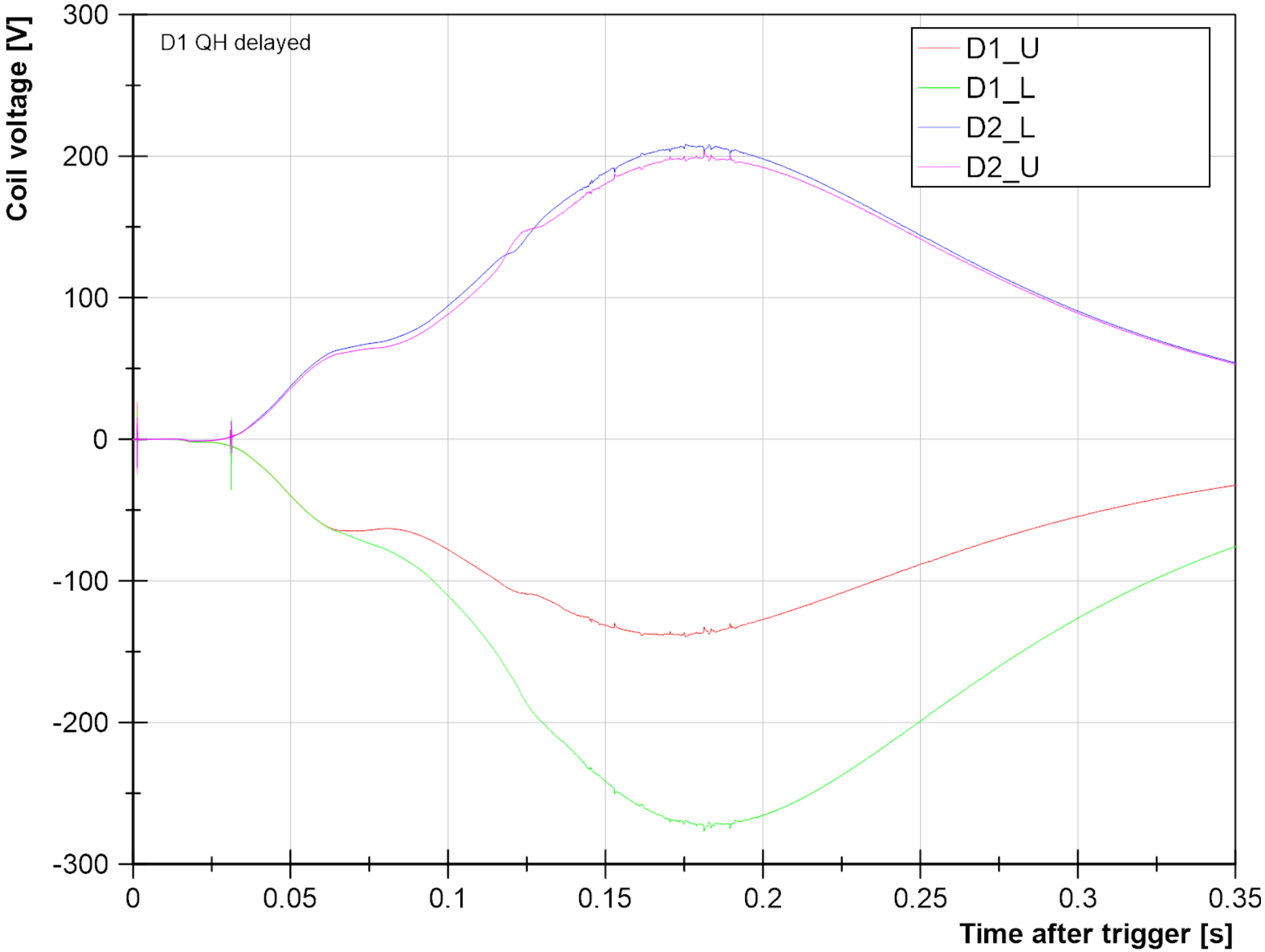
Test history at 9 kA



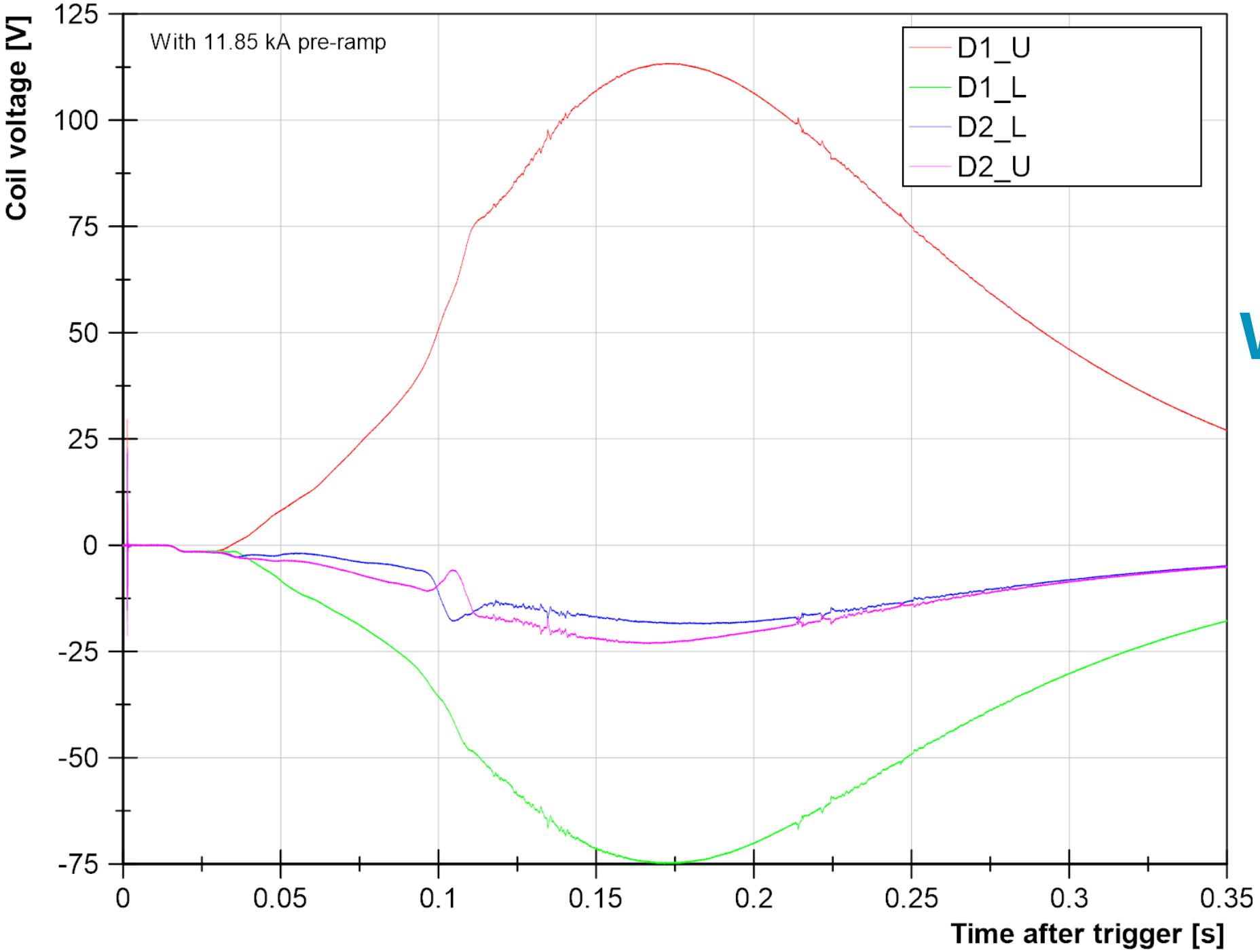




Coil voltage after 9 kA discharge: normal



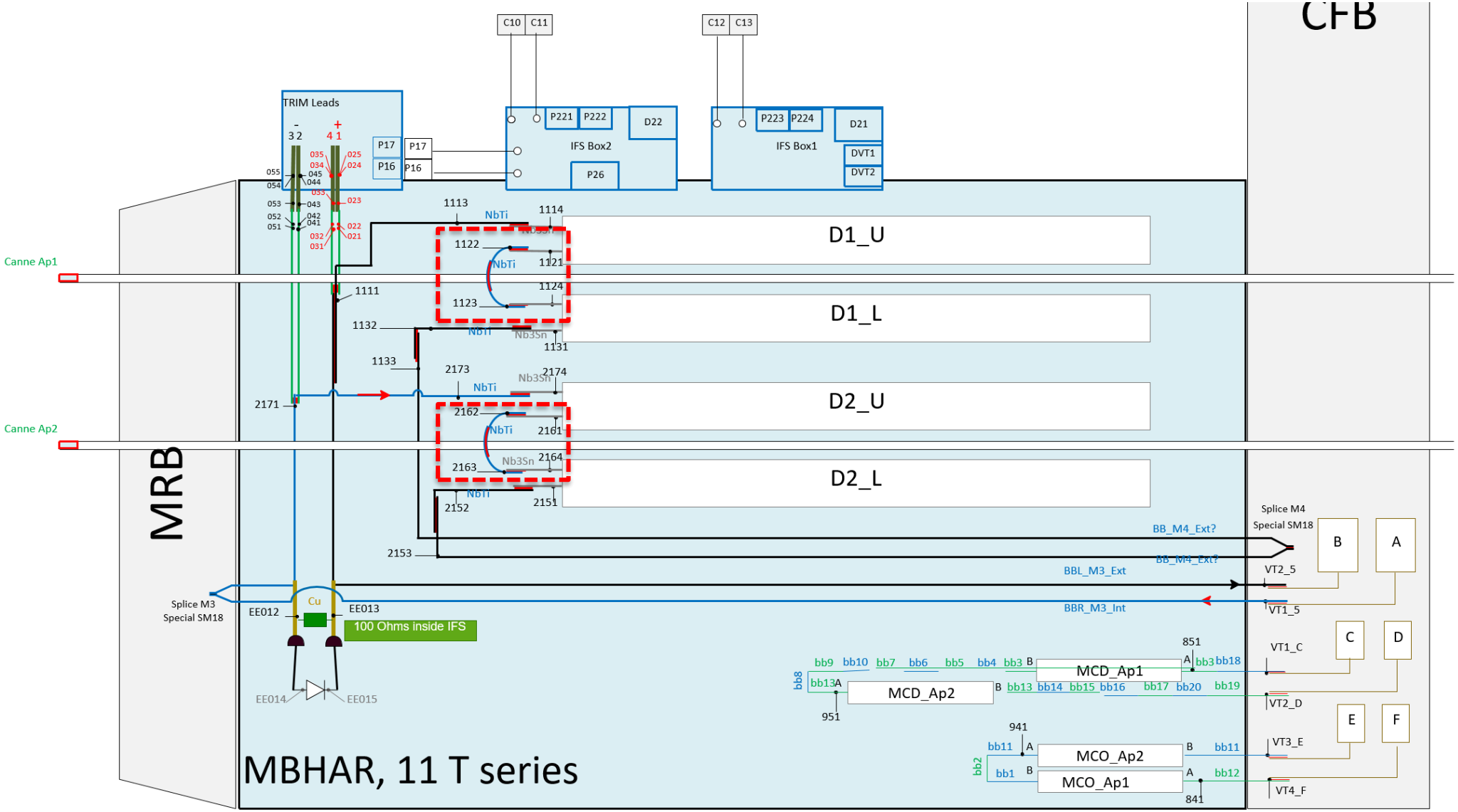
Coil voltage after 9 kA discharge: D1 QH delayed



Coil voltage after 9 kA discharge: With pre-ramp

Next steps

- Wiring: add diode wiring
- Pre-ramp to 11.85 kA and discharge at 9 kA (repeat)
- Magnetic measurements
- Preparation for artificial short & impedance
- Impedance measurement during discharge
- Artificial short test with 100 Ohm, at 1.5, 6, 9 kA


CFB
MRB
TRIM Leads
C10
C11
C12
C13
P221
P222
D22
IFS Box2
P223
P224
D21
IFS Box1
DVT1
DVT2
P26
P17
P16
Canne Ap1
Canne Ap2
D1_U
D1_L
D2_U
D2_L
NbTi
Nb3Sn
Splice M3
Special SM18
EE012
EE013
Cu
100 Ohms inside IFS
EE014
EE015
Splice M4
Special SM18
BB_M4_Ext?
BBL_M3_Ext
BBR_M3_Int
VT2_5
VT1_5
VT1_C
VT2_D
VT3_E
VT4_F
MCD_Ap1
MCD_Ap2
MCO_Ap2
MCO_Ap1
MBHAR, 11 T series