

Photosensor WG meeting

Denise Casazza on behalf Ferrara group
University of Ferrara - 25/07/23

Ferrara group: M. Andreotti, A. Balboni, W. Baldini, R. Calabrese, S. Chiozzi, A. Cotta Ramusino, R. D'amico, M. Fiorini, D. Fornaro, T. Giammaria, C. Giugliano, M. Guarise, E. Luppi, I. Neri, L. Tomassetti.



Università
degli Studi
di Ferrara



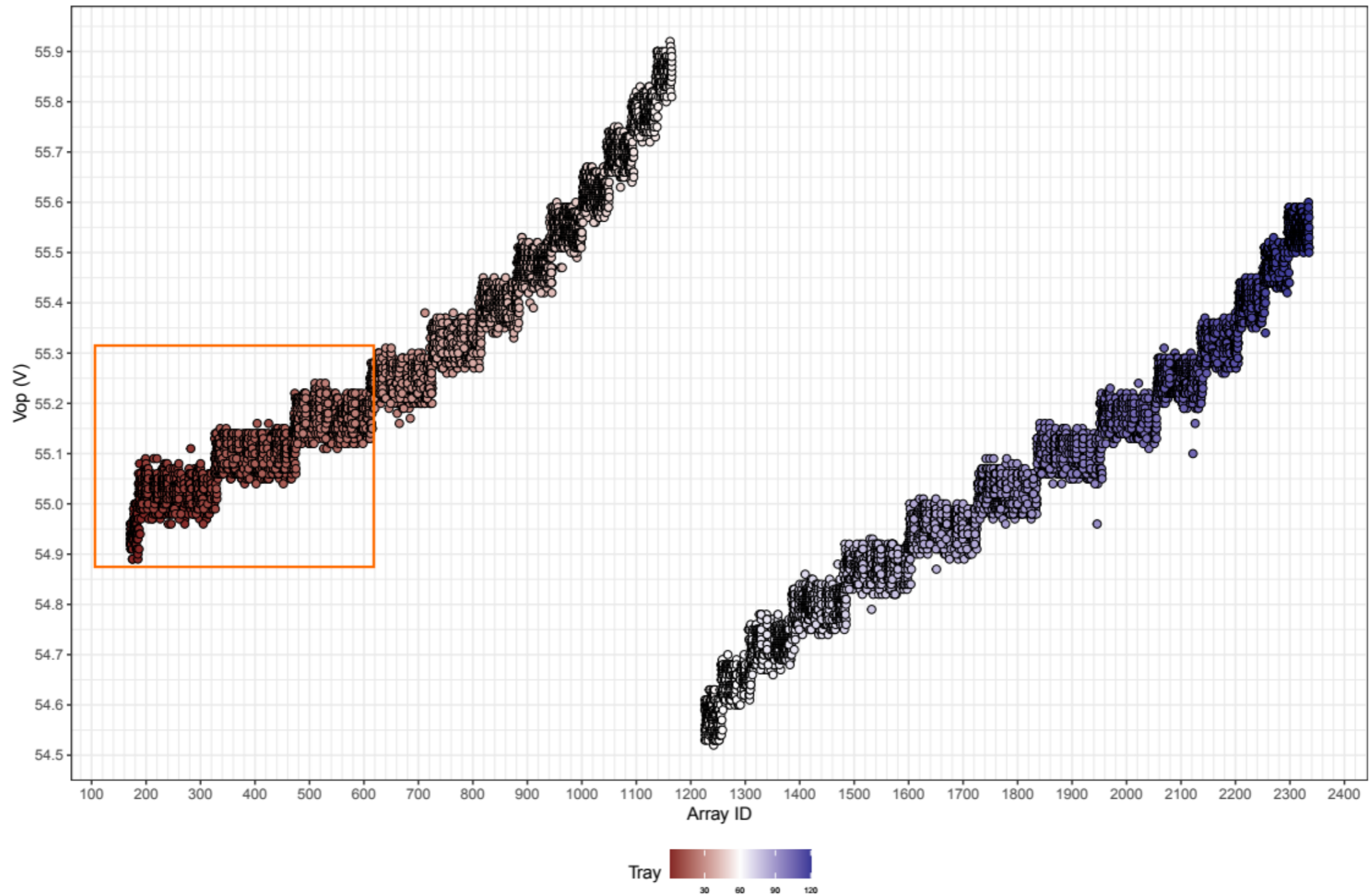
Batch FER002 test

- **Test period** 01/06/2023 - 07/07/2023.
- **Delivery** 1 (HPK).
- **Box** 4.
- **400 Arrays.**
- **Trays** 1-24.
- **Performed tests:** IV at room T, IV at LN₂ 1st cycle, IV at LN₂ 3rd cycle, DCR, IV extended at LN₂.

HPK V_{op} at room T

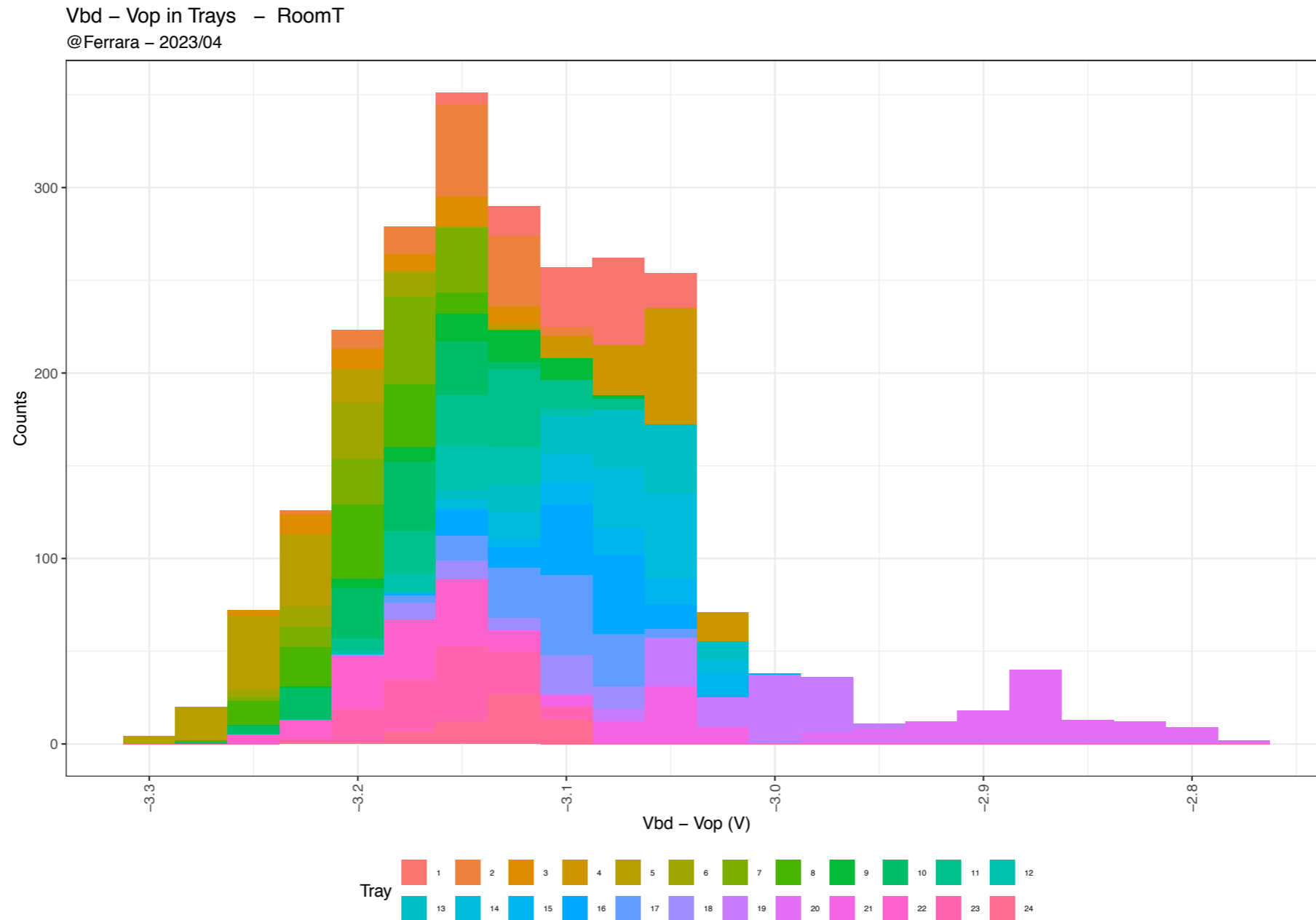
Vop spreads in Trays 1 - 120 - ROOMT

@HPK: First_delivery_2000_Boards.xlsx



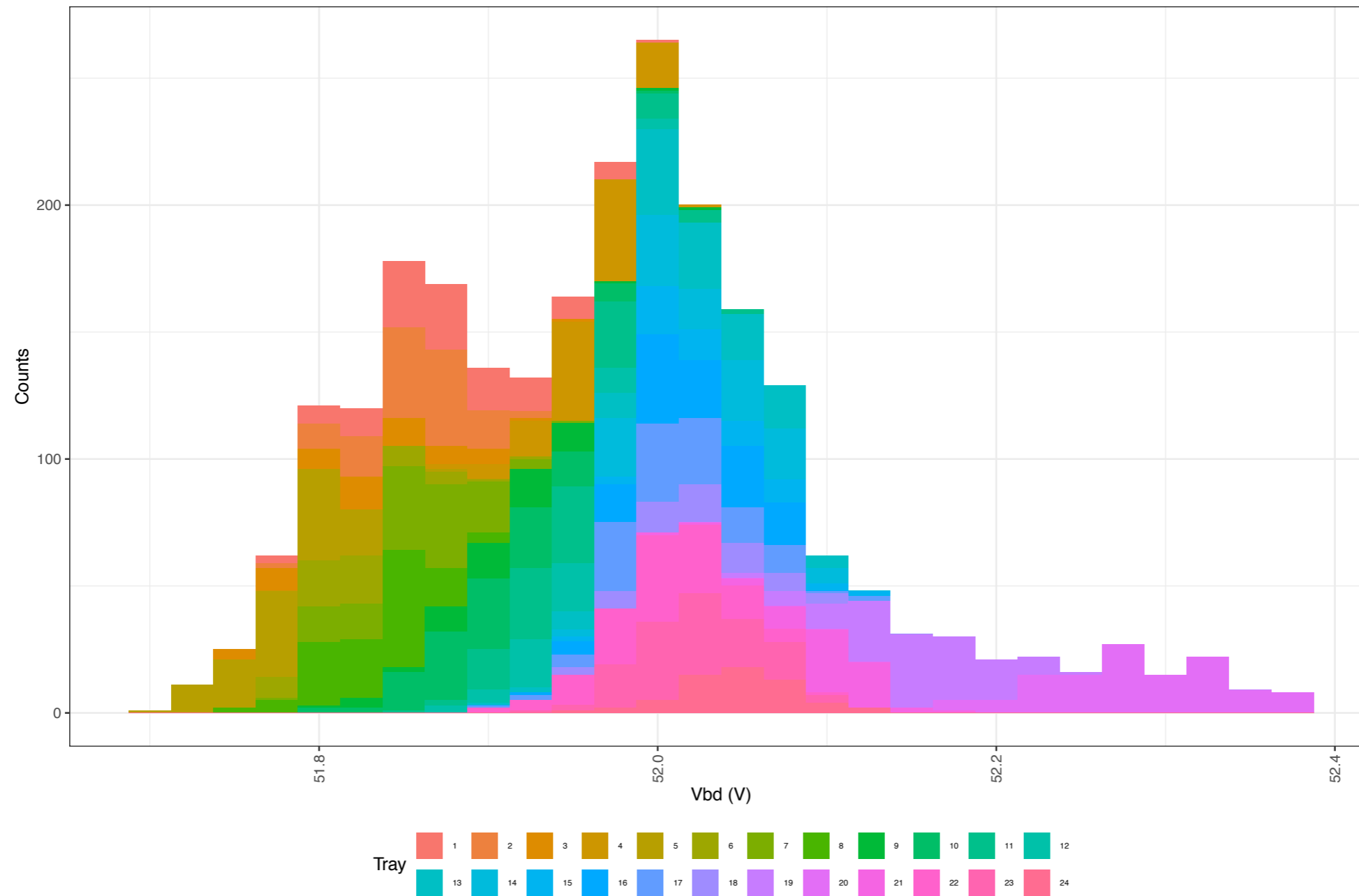
$V_{bd} - V_{op}$ at room T

HPK specs $\rightarrow V_{bd} - V_{op} = -3V$



V_{bd} at room T

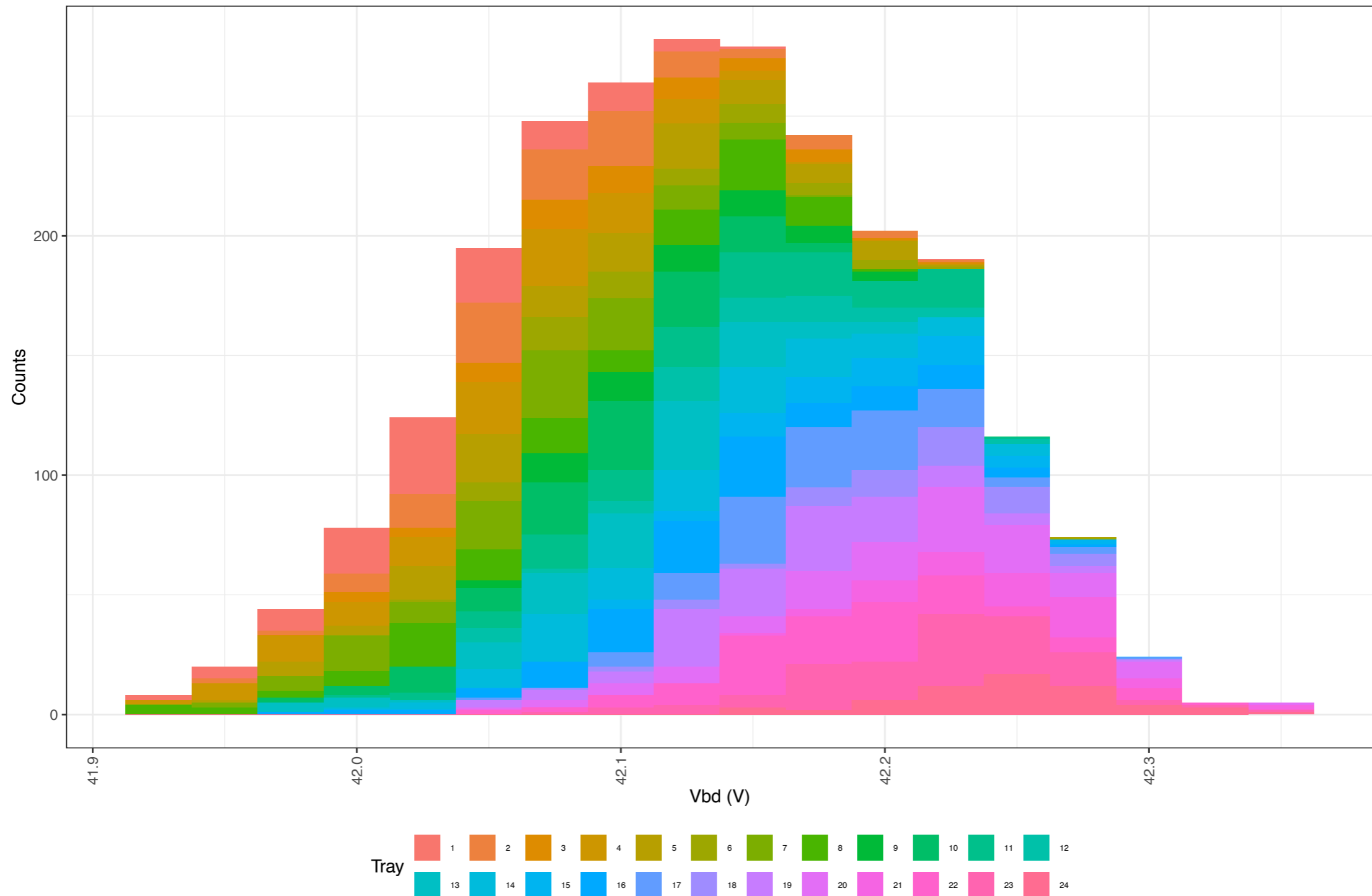
Vbd in Trays – RoomT
@Ferrara – 2023/04



V_{bd} at LN₂ T 3rd cycle

V_{bd} in Trays – LN₂

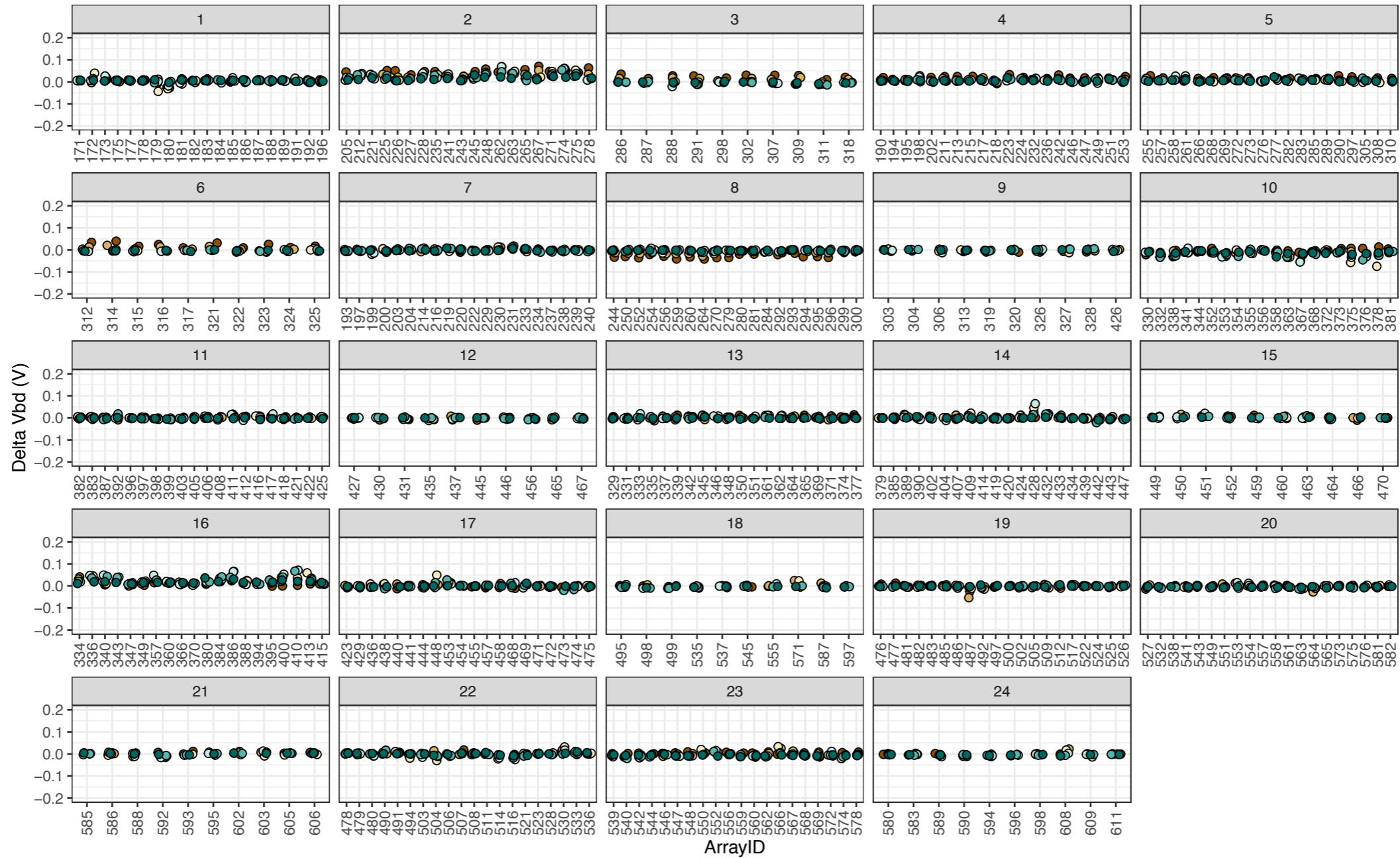
@Ferrara – 2023/04



V_bd 3rd - 1st cycle at LN₂ T

Delta V_bd in FER002 Trays (3rd - 1st cycle)

@Ferrara - 2023/04

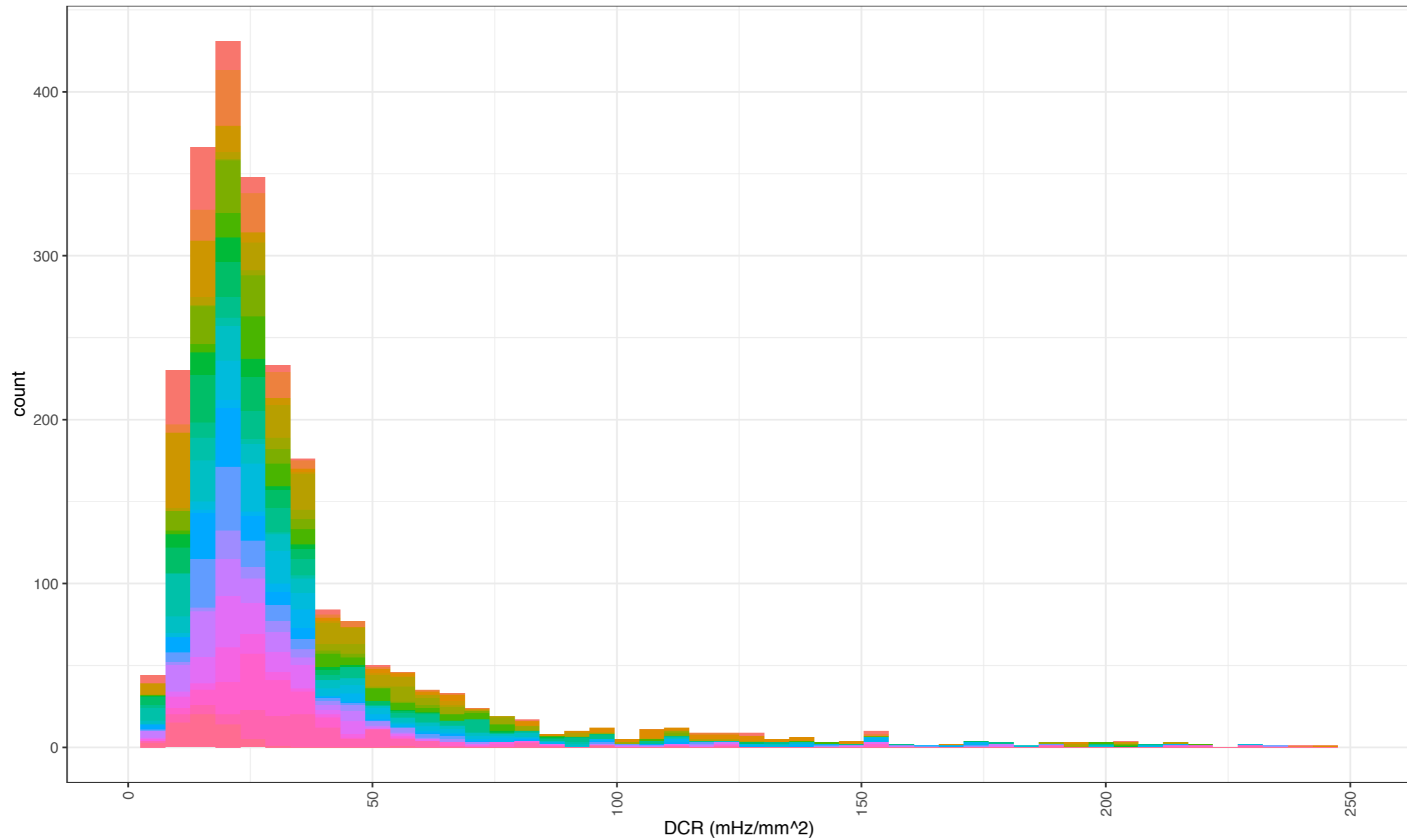


LocationID ● 1 ● 2 ● 3 ● 4 ● 5 ● 6

DCR measurements

Histogram of DCR in FER002 Trays

@Ferrara - 2023/07



QR code in delivery 2

QR code in the array should have 6 digits as shown in Figure



We found that starting from array 3000 the QR code has 10 digits (0000003751).

LabVIEW expects 6 digits so we are waiting further confirmation if it is an exception or it is a new standard.

Conclusions

- Great accordance with HPK data (available only at room T).
- Between 3 and 1 cycles no SiPM shows failure. The measurements with CACTUS system are repeatable.
- All the SiPMs passed the IV extended test.
- The test for the box 10 has been started.
- Installation of CACTUS in Milano Bicocca completed on July 19th.