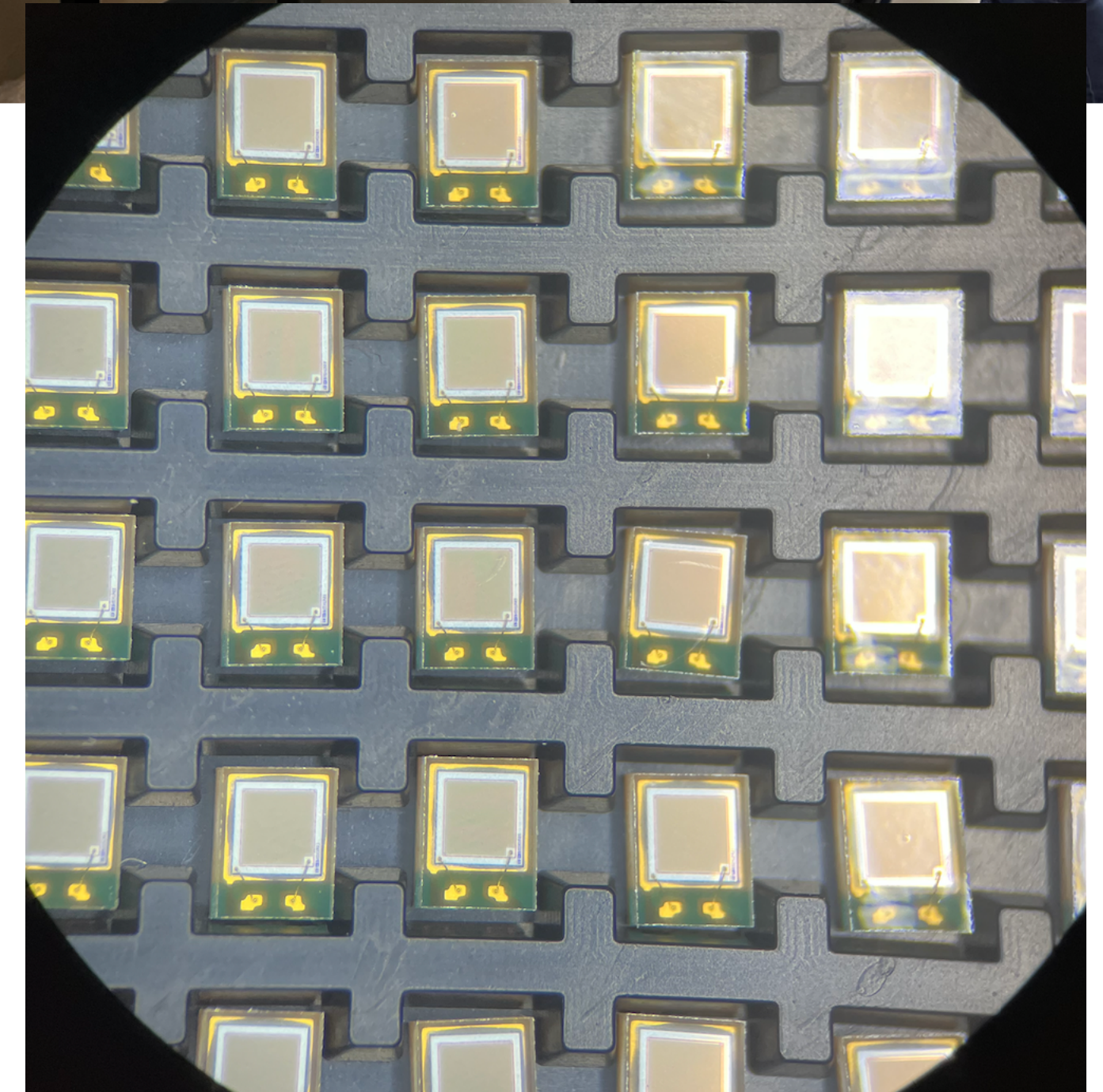


LFHCal SiPM QC

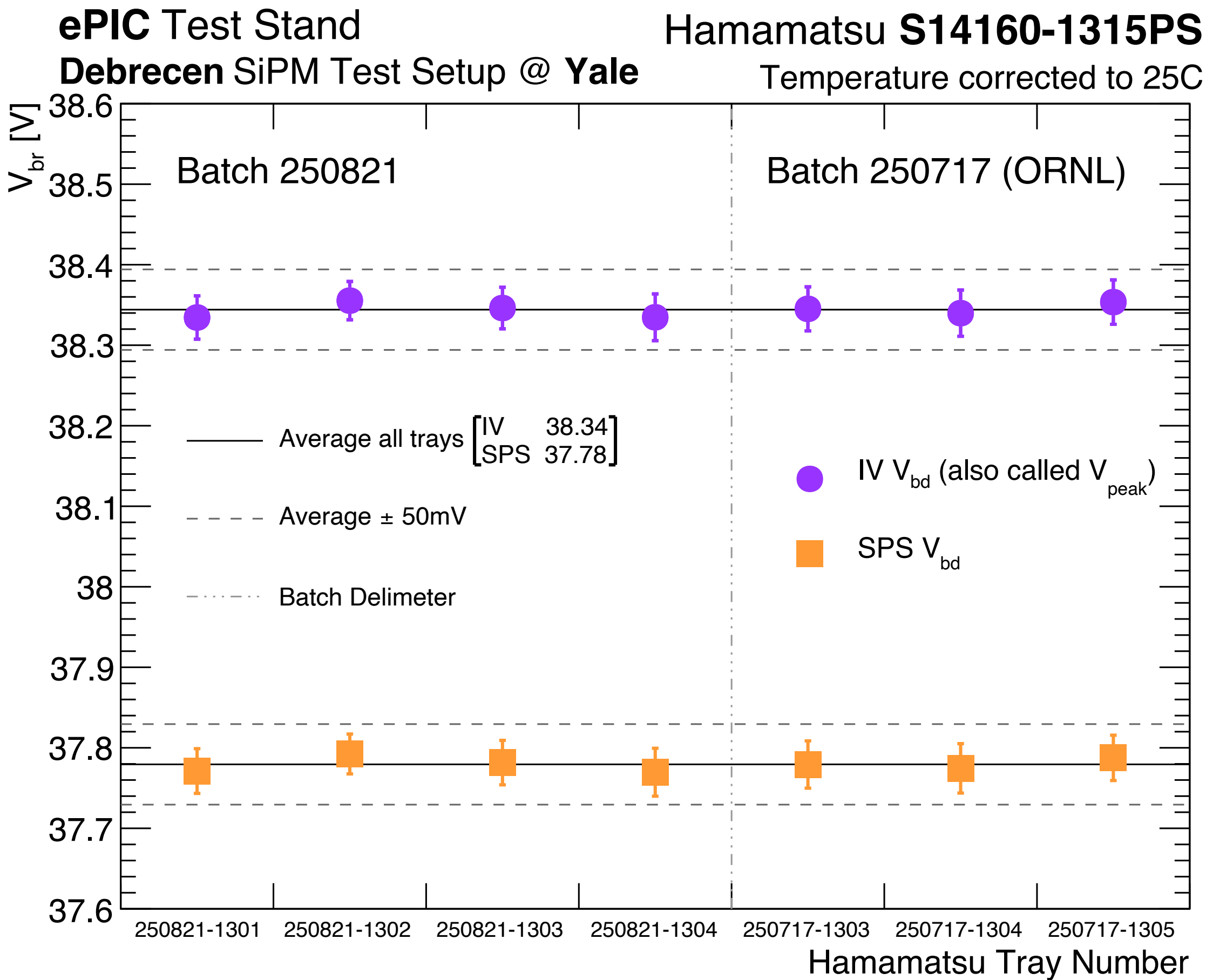
Yale Update

PI	Helen Caines, Laura Havener
Research Scientist	Prakhar Garg
Postdoc	Isaac Mooney
Grad Students	Emily Pottebaum, Ryan Hamilton
Undergrads	Elisa Kim, Langan Zhu

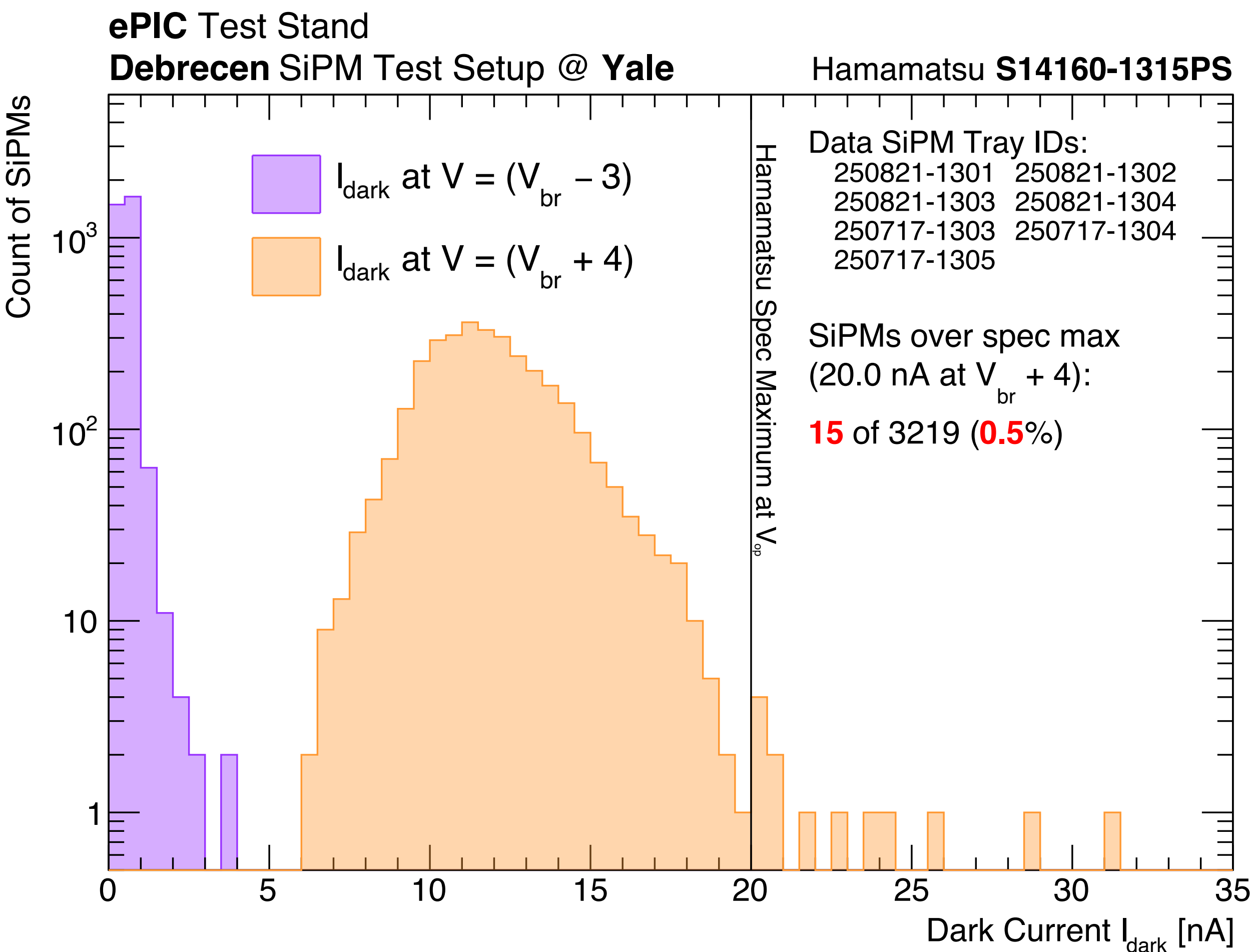


All Data So Far

Total V_{bd} outliers: **234** of 3219 (**7.3%**)
(relative to global average, 129 for +/- 55mV)



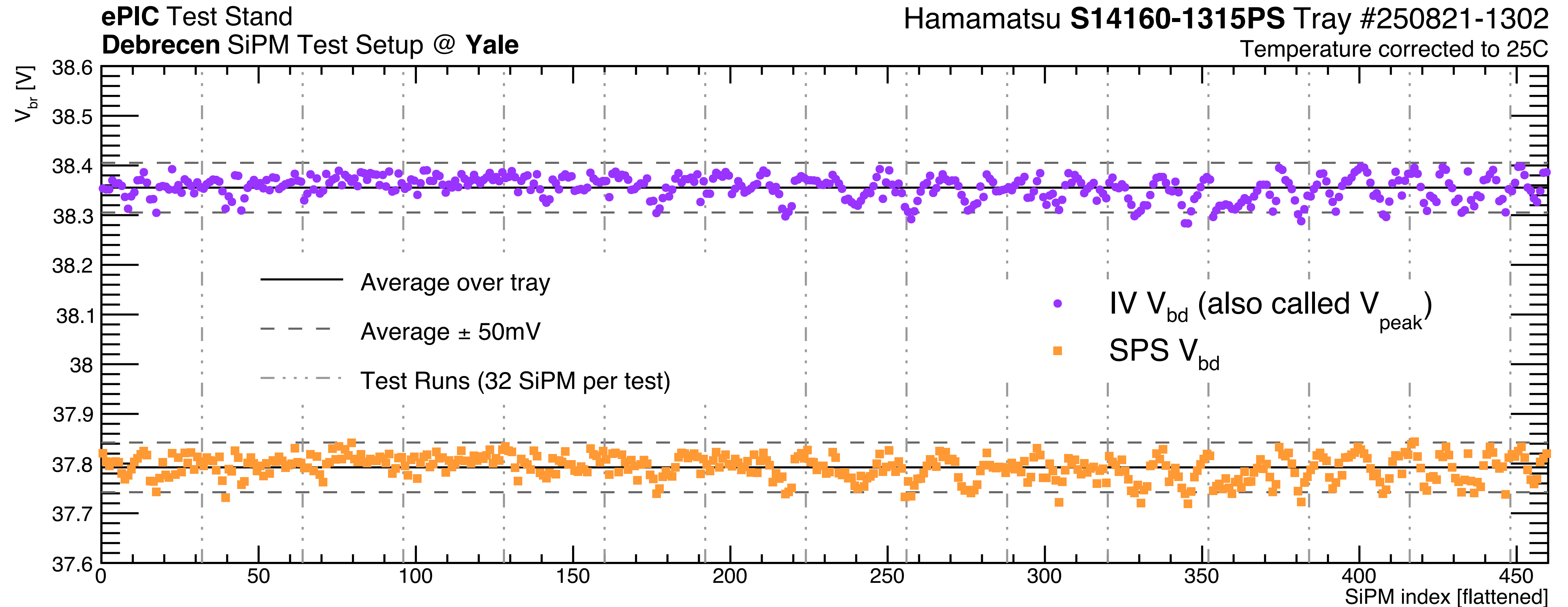
Total I_{dark} outliers: **15** of 3219 (**0.5%**)



Wednesday 11/5
Systematics on the Test Setup

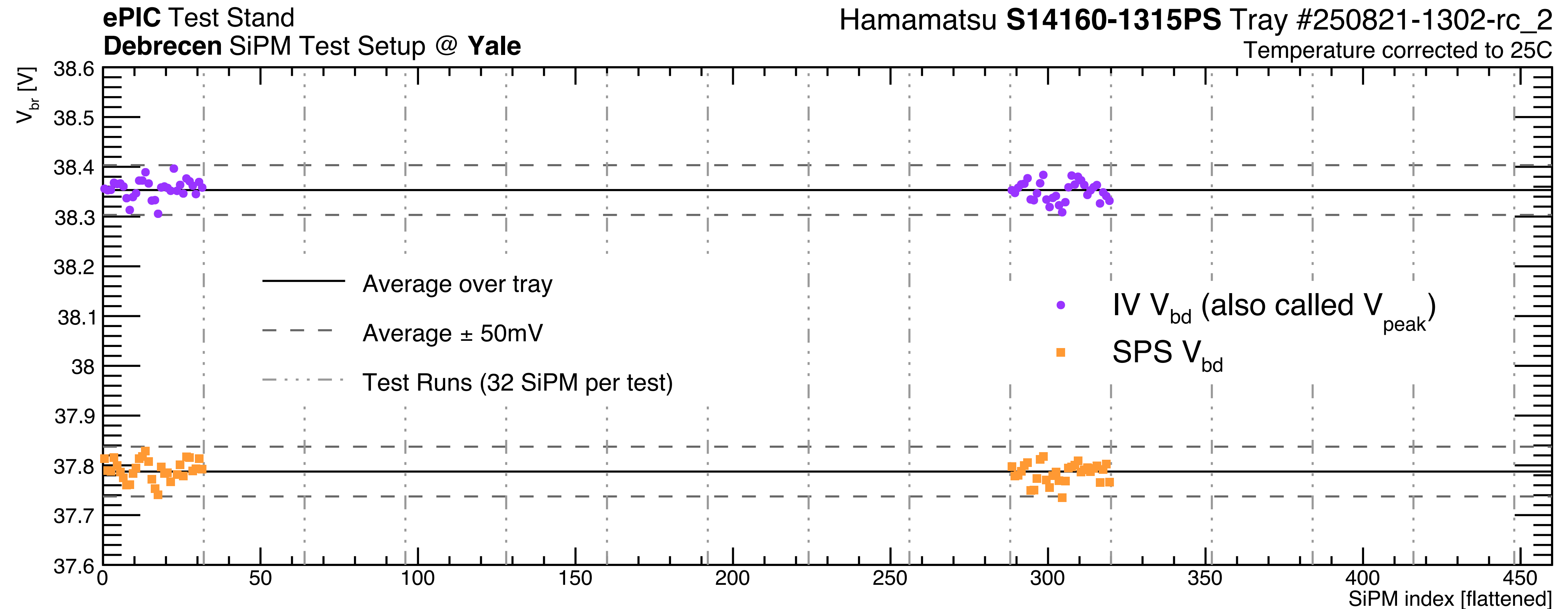
Systematics on the Test Setup

Not extensive but good first look: Reproducibility test



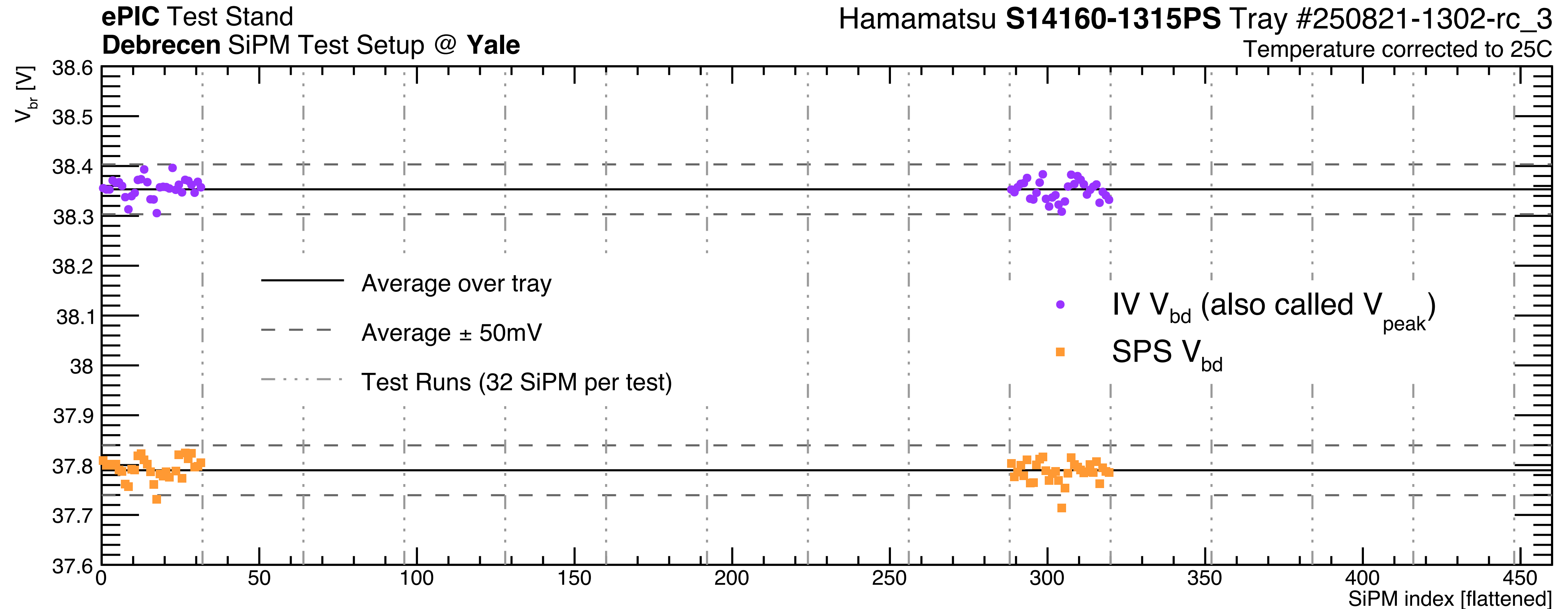
Systematics on the Test Setup

Not extensive but good first look: Reproducibility test



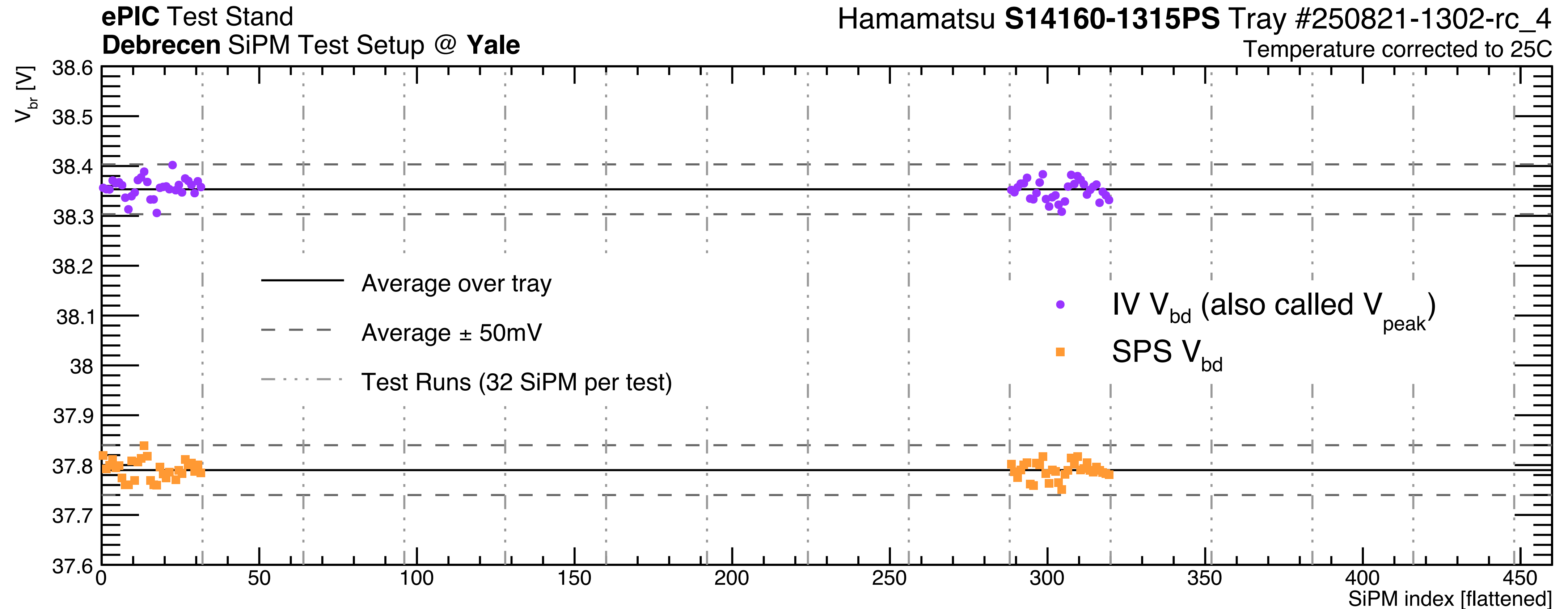
Systematics on the Test Setup

Not extensive but good first look: Reproducibility test



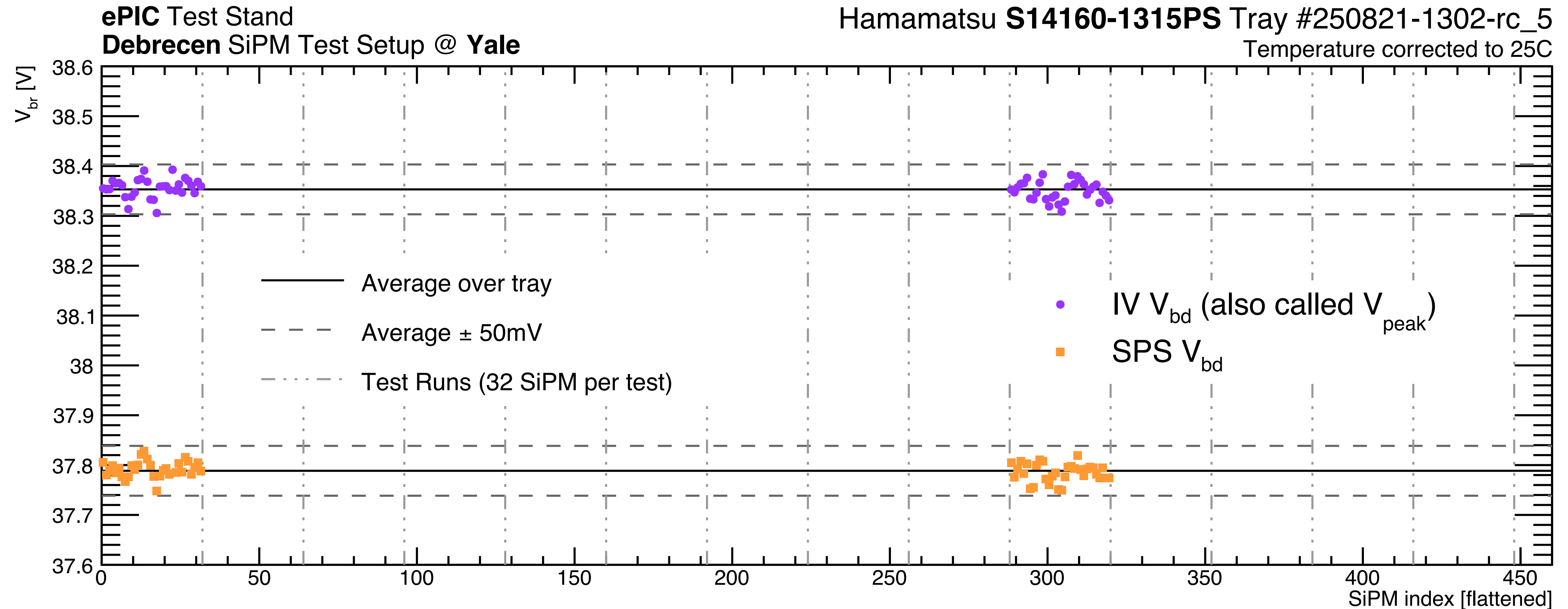
Systematics on the Test Setup

Not extensive but good first look: Reproducibility test



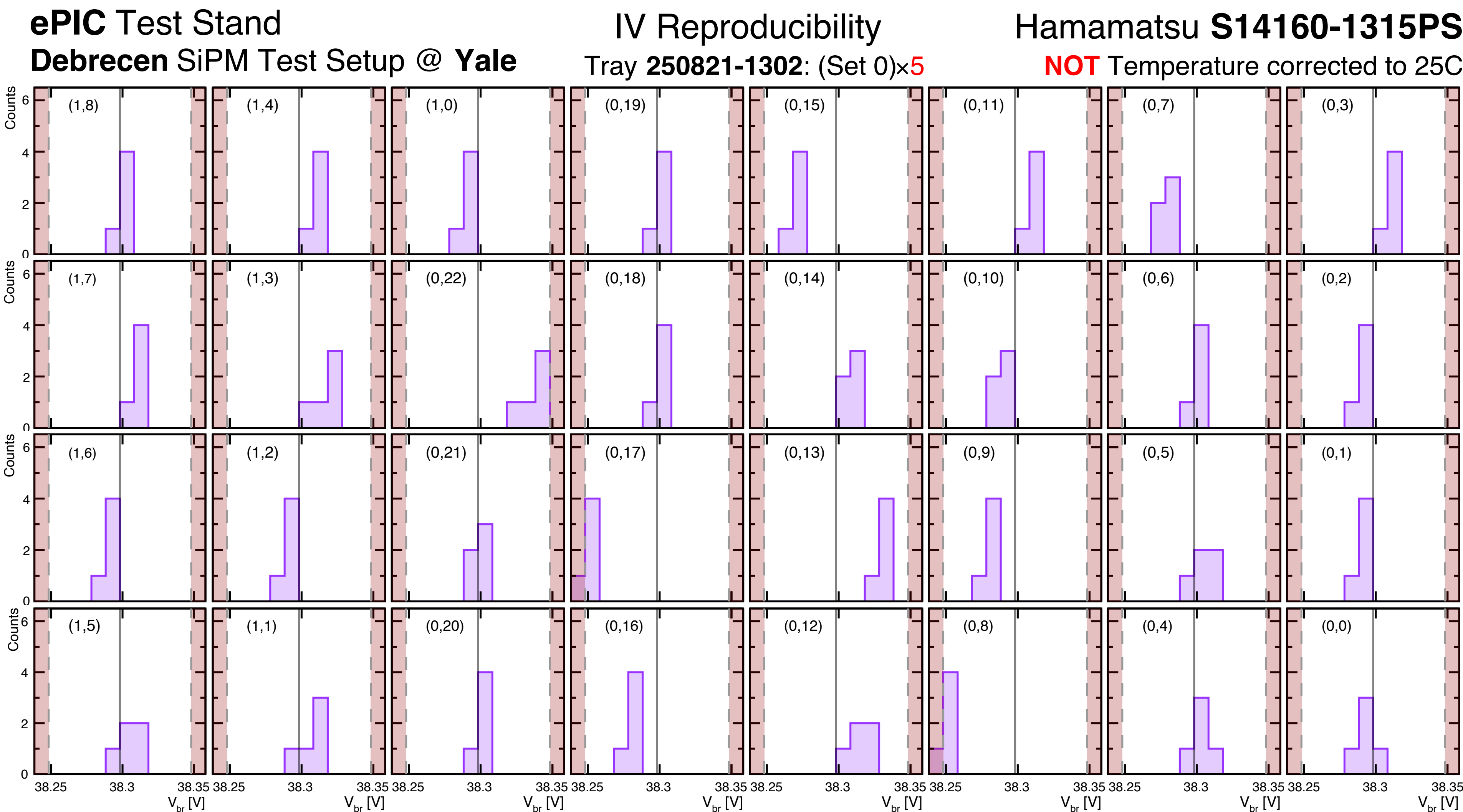
Systematics on the Test Setup

Not extensive but good first look: Reproducibility test



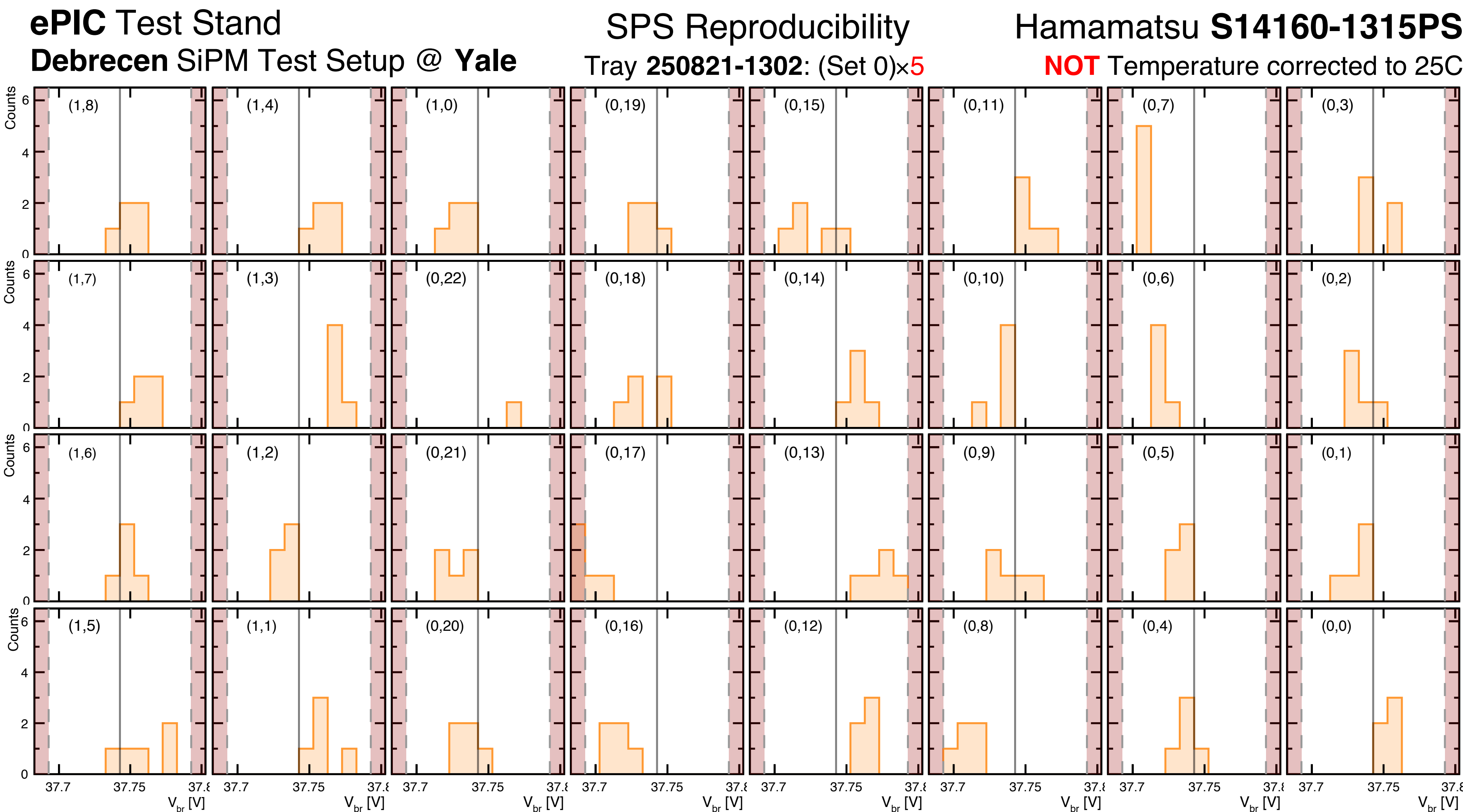
Systematics on the Test Setup

Not extensive but good first look: Reproducibility test



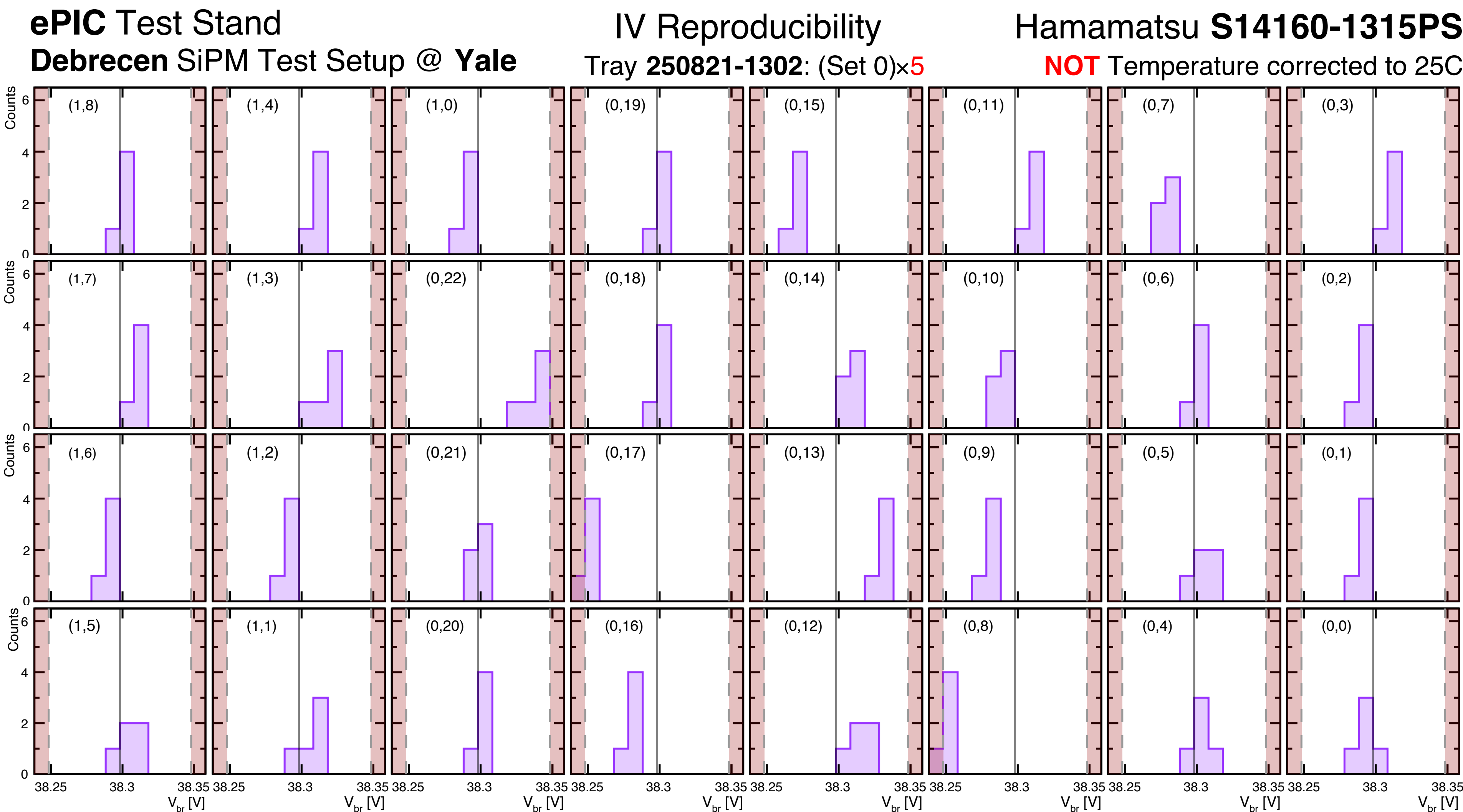
Systematics on the Test Setup

Not extensive but good first look: Reproducibility test



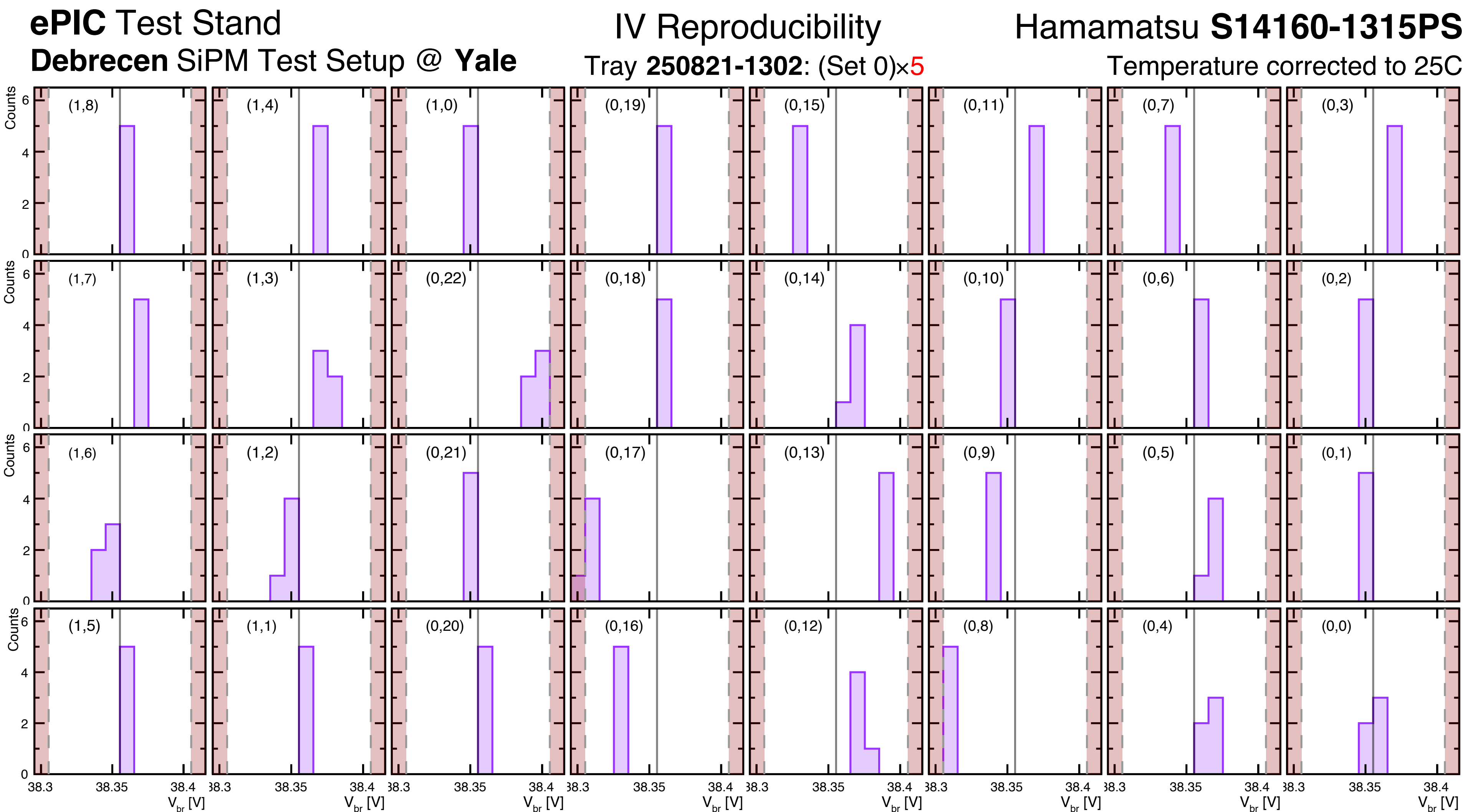
Systematics on the Test Setup

Temperature correction does play a role!



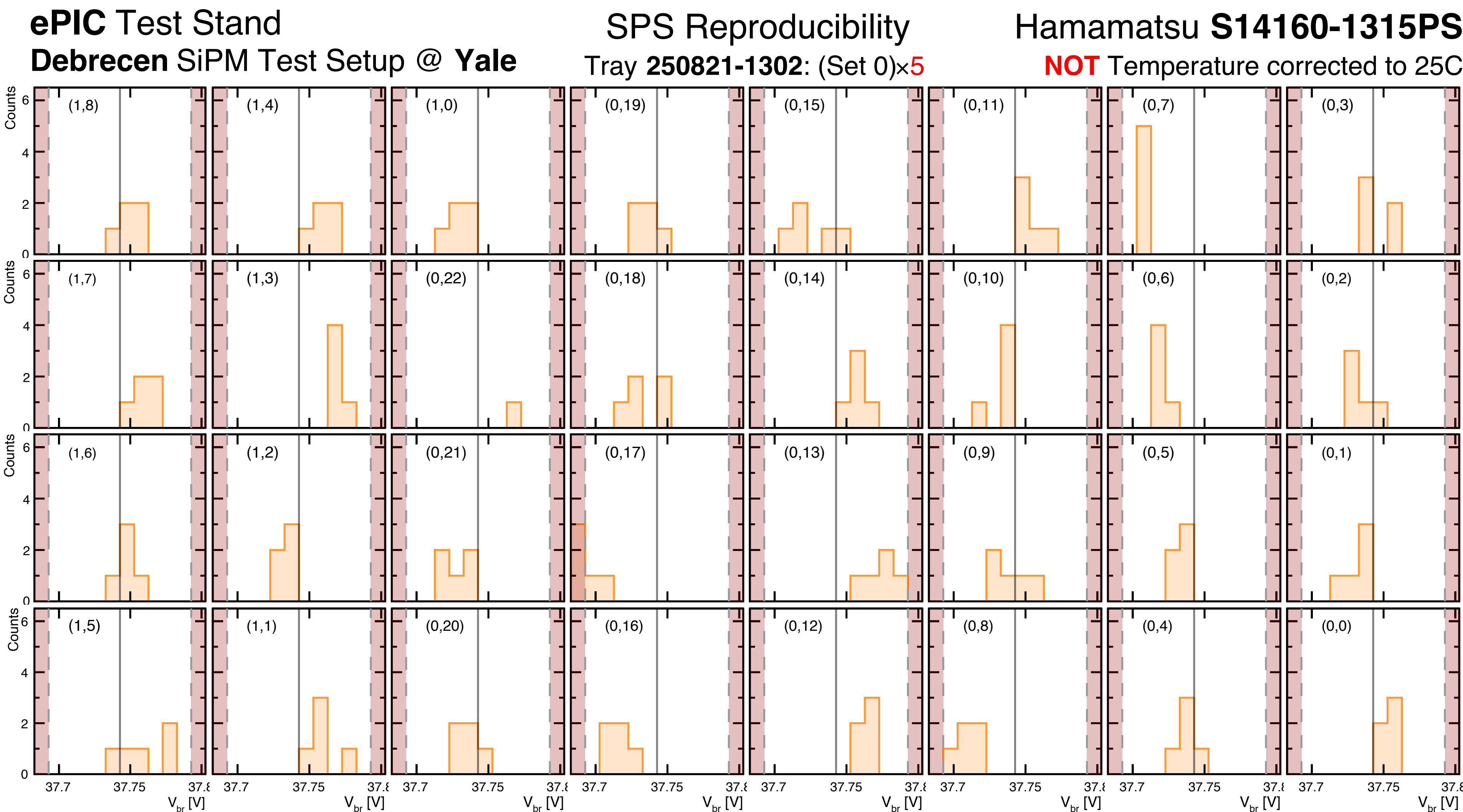
Systematics on the Test Setup

Temperature correction does play a role!



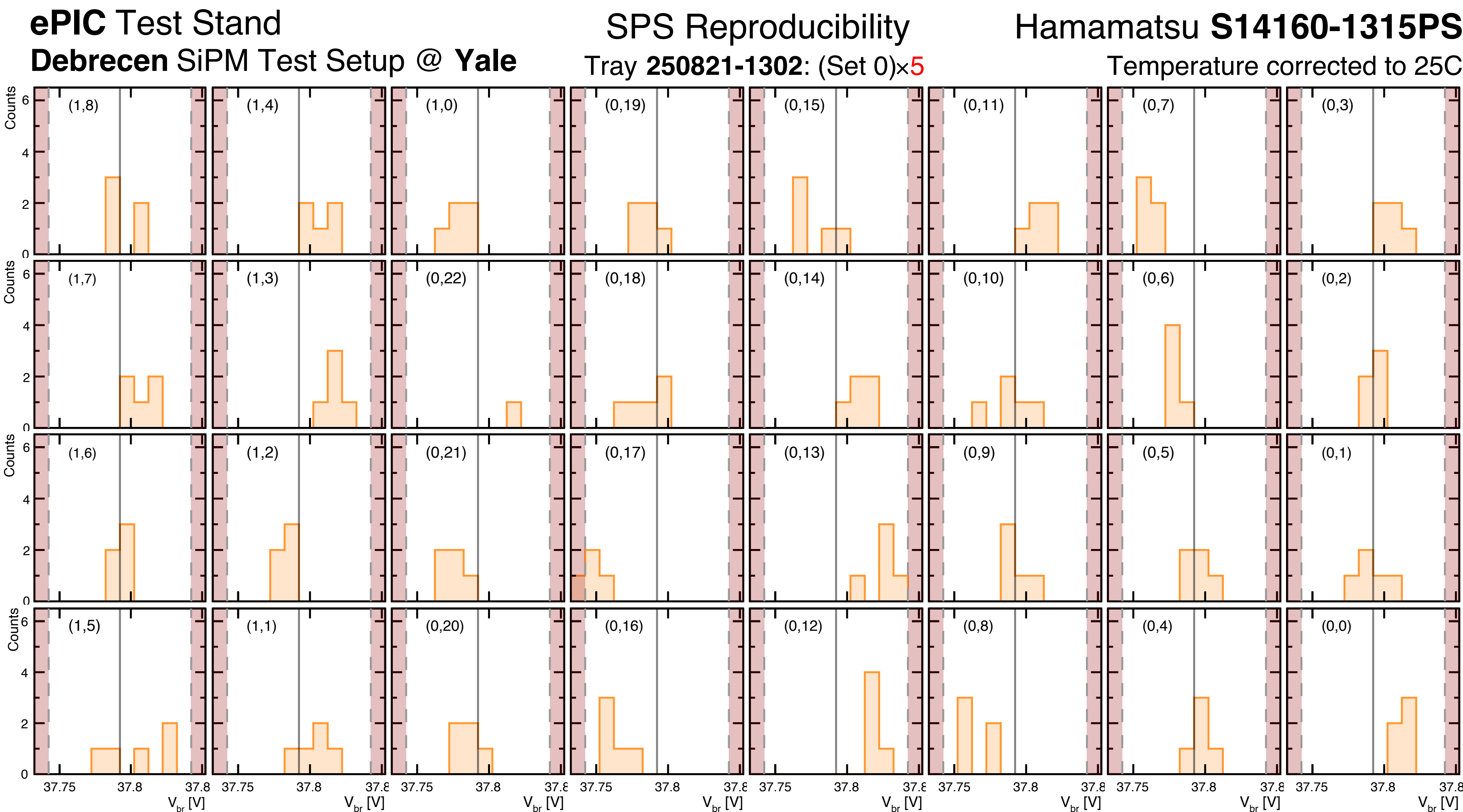
Systematics on the Test Setup

Temperature correction does play a role!



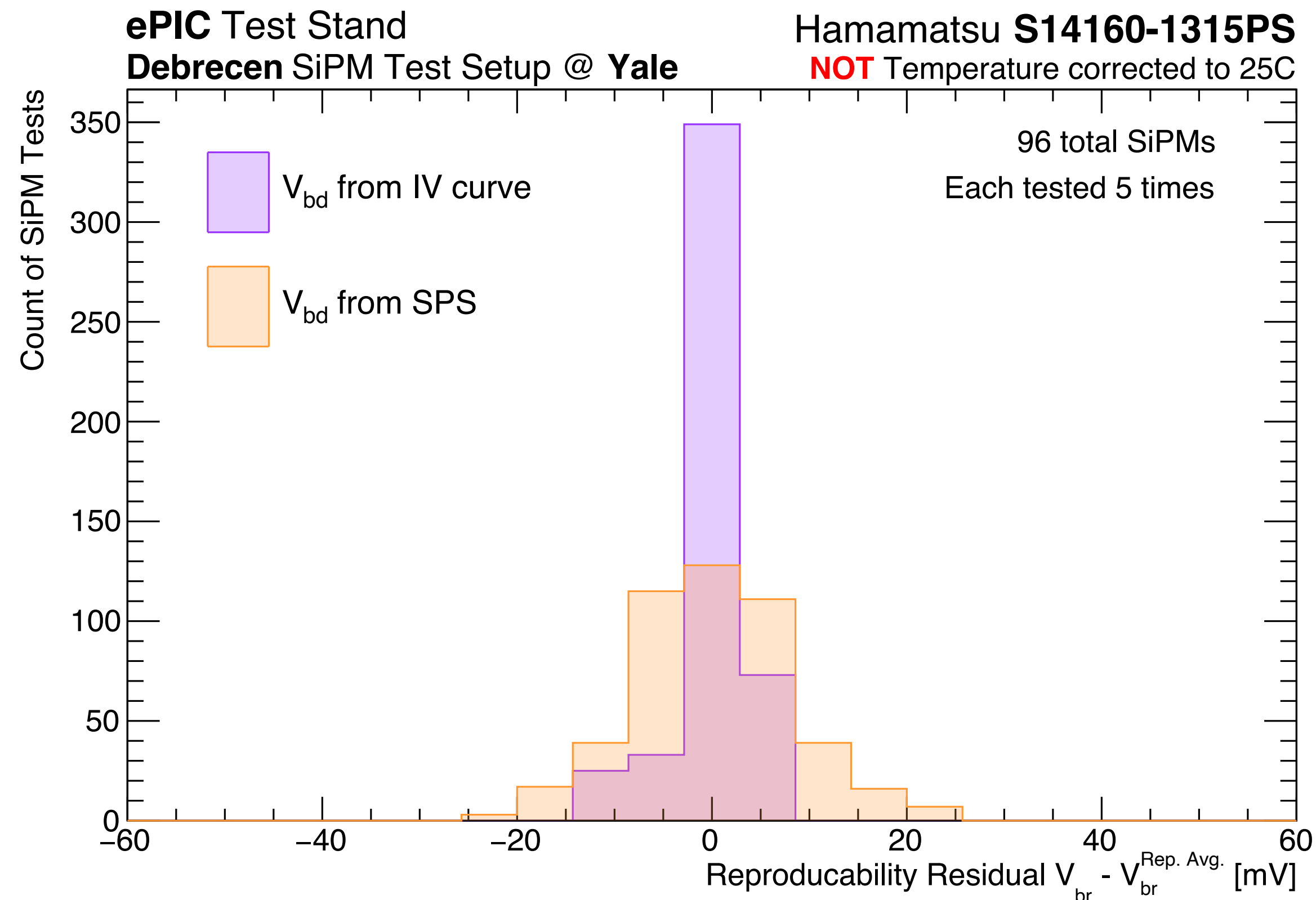
Systematics on the Test Setup

Temperature correction does play a role!

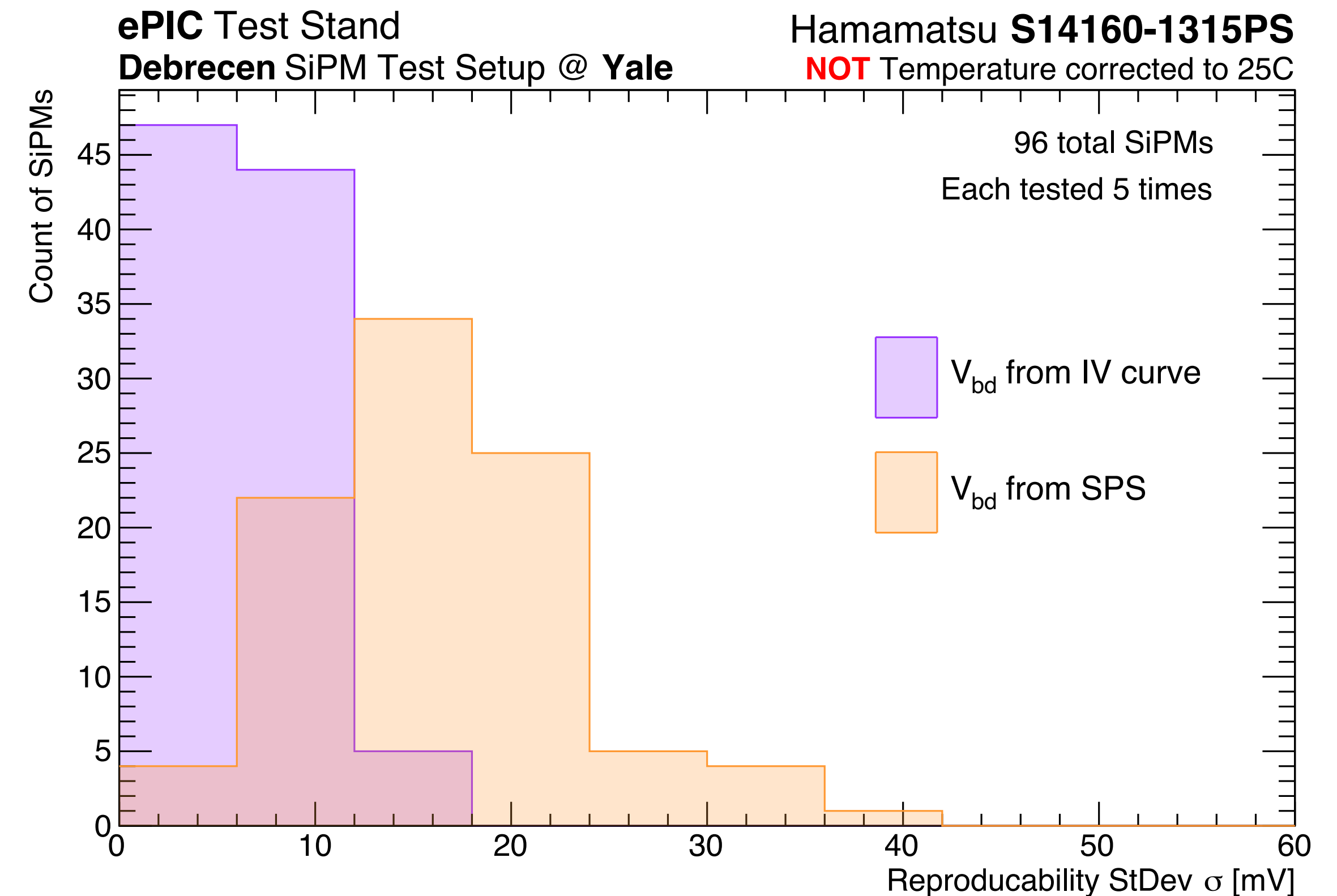


Systematics on the Test Setup

Taking stock with Residual and Variance distributions



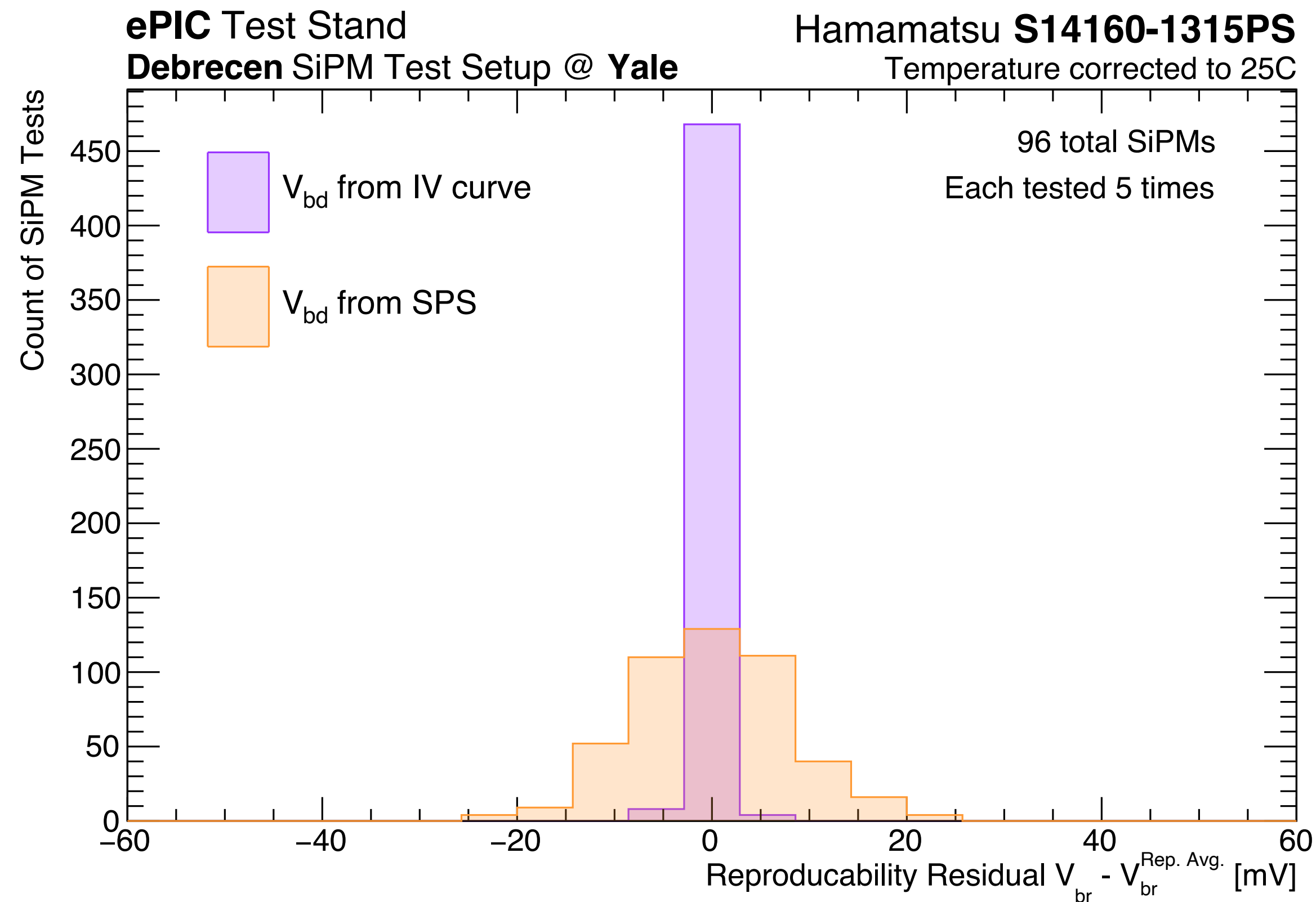
(Previous SiPM distributions aligned around their average over 5 tests)



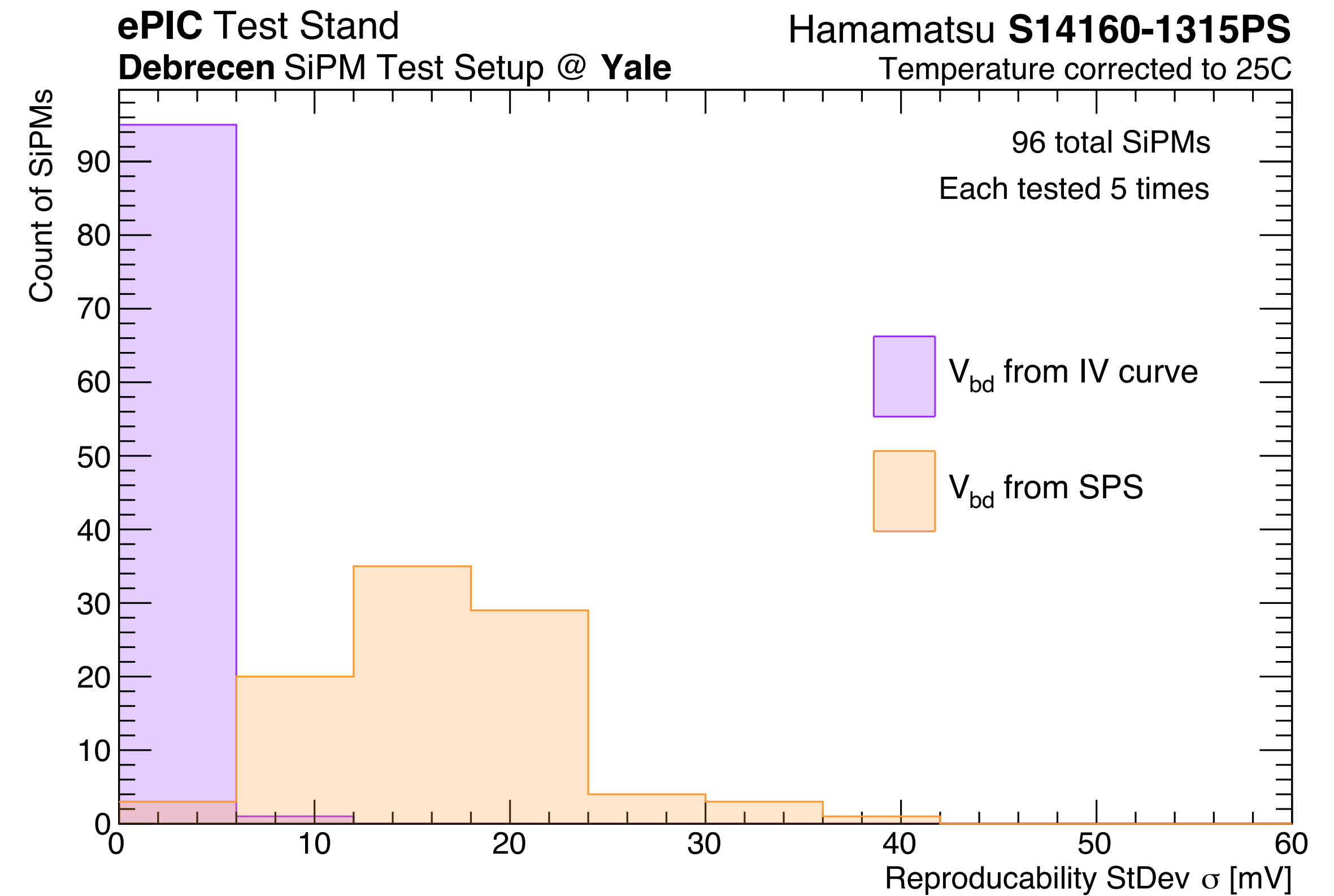
Distribution of sigma from the per-SiPM distributions

Systematics on the Test Setup

Taking stock with Residual and Variance distributions



(Previous SiPM distributions aligned around their average over 5 tests)

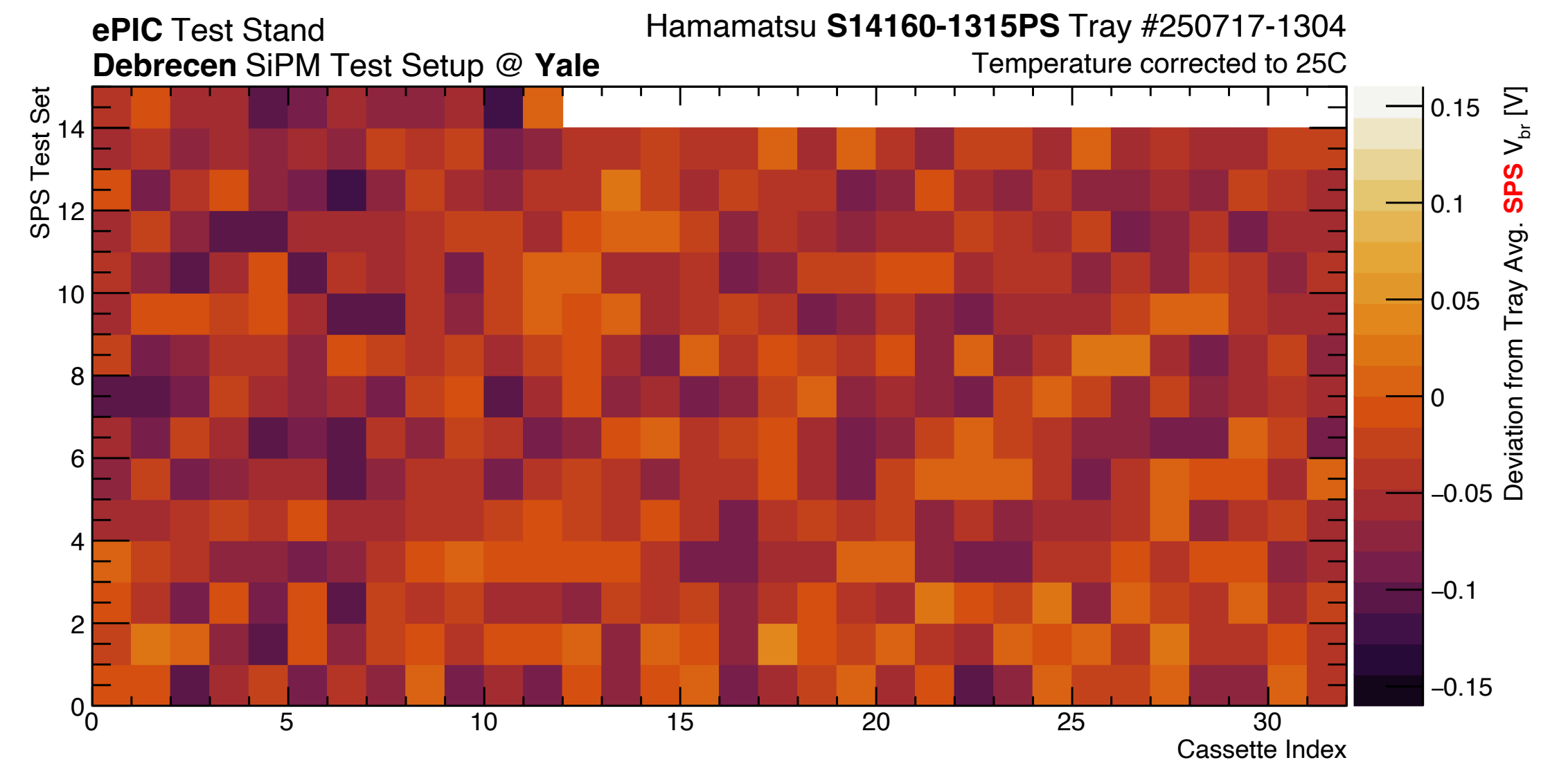
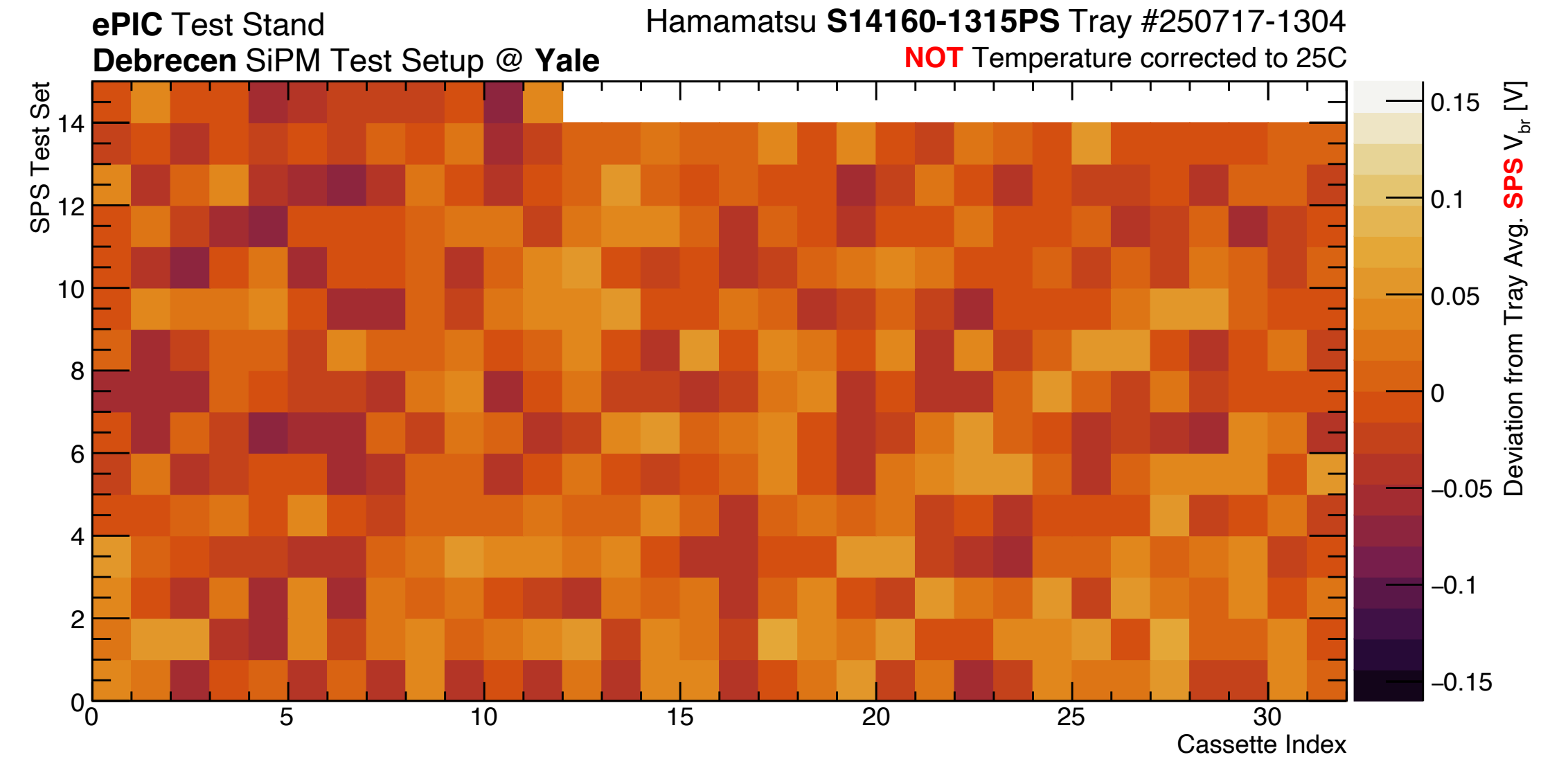


Distribution of sigma from the per-SiPM distributions

Systematics on the Test Setup

More differential systematics to come soon!

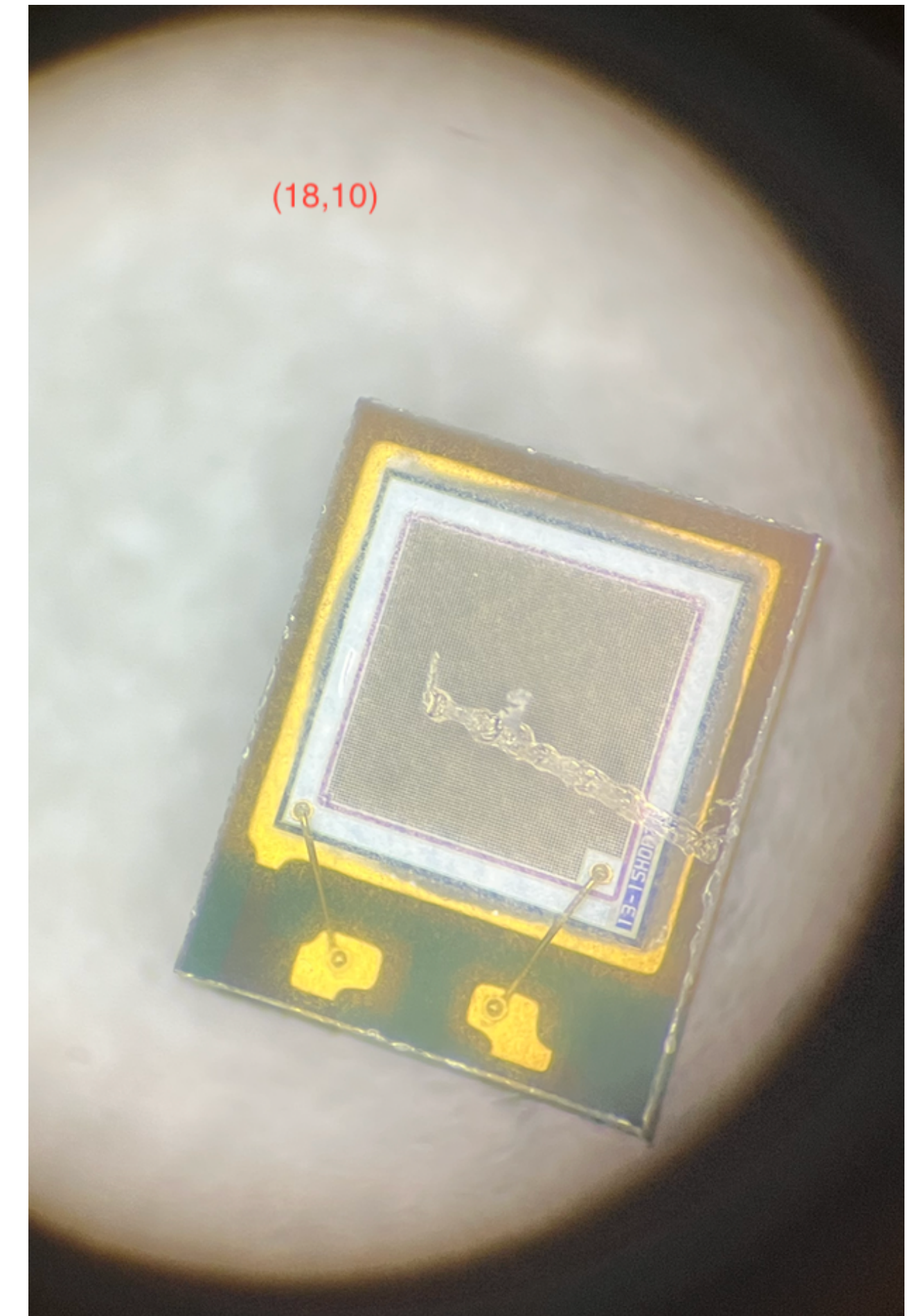
- Temperature readjustment of the lab gave the opportunity for a temperature scan
- Test-indexed heat maps suggest not cassette/test index correlated but a more thorough investigation is underway



Systematics on the Test Setup

More differential systematics to come soon!

- Temperature readjustment of the lab gave the opportunity for a temperature scan
- Test-indexed heat maps suggest not cassette/test index correlated but a more thorough investigation is underway
- V_{op} scan (i.e. separation from SPS interpolation axis) done and data is processing
- SiPM surface defects have been carefully tracked, we're also looking into correlations with obstructed area



Full photo catalog available here:

https://drive.google.com/file/d/14XNQL0FtxVvq2OZIpTtmdDHcwnalf6B9/view?usp=share_link