

# NSS LYON 2000 ATLAS TRT Electronics

## Analysis of Channel to Channel Threshold Offset Contributions

- Threshold vs  $Q_{in}$  is reasonably linear.
- **Absolute offsets** NOT threshold slope appears to be the **primary** offset contributor.

> **PROBLEM** is **in** or **after** the BLR< (capacitor coupling)

### Three Predominant Sensitivities have been Identified

- 1- **V<sub>be</sub> match** at Discriminator input
- 2- RBXB **resistor match** in Collectors of first Disc. Stage
- 3-RBXB match in coupling between BLR and Disc. Input

	$\Delta V_{be}$ (1.2 $\mu$ m)	RBXB match factor
EDR 3Sigma match	1.85mV	25
Measured Value	~6mV	~50 <sup>**</sup>

<sup>\*\*</sup> Measured Resistors not optimized for matching

### Calculated Threshold Offset Contributions (sigma)

Param used	Input R match	Col. R match	V <sub>be</sub> match
Spec	22mV	6mV	7mV
Meas	44mV	13mV	33mV

### Calculated Threshold Offset vs Observed

Param Used	Threshold Offset
Spec	24mV
Meas	56mV
Observed nom	44mV
Observed Blr Adj	33mV (BLR → ~29mV)