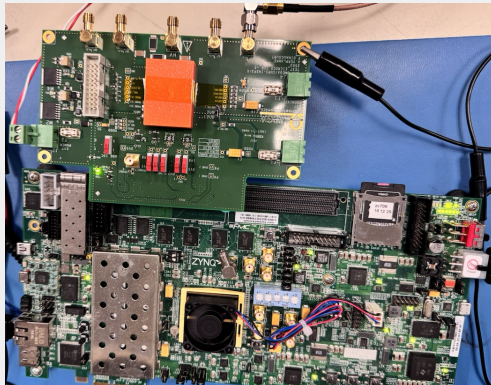


EICROCOA Testing Updates

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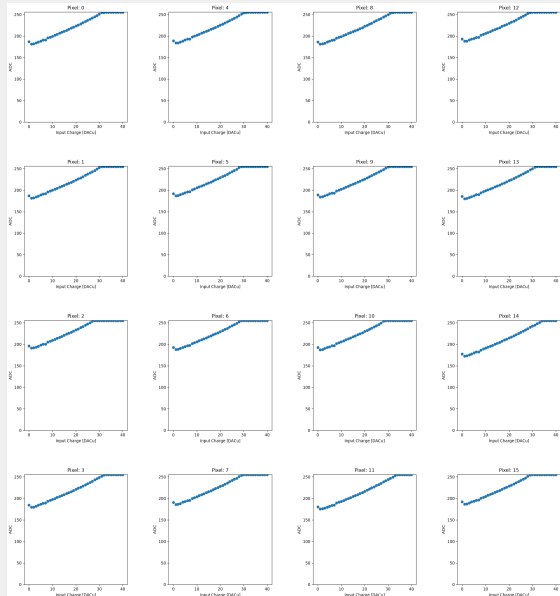
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September 18, 2026



ADC vs Input Charge

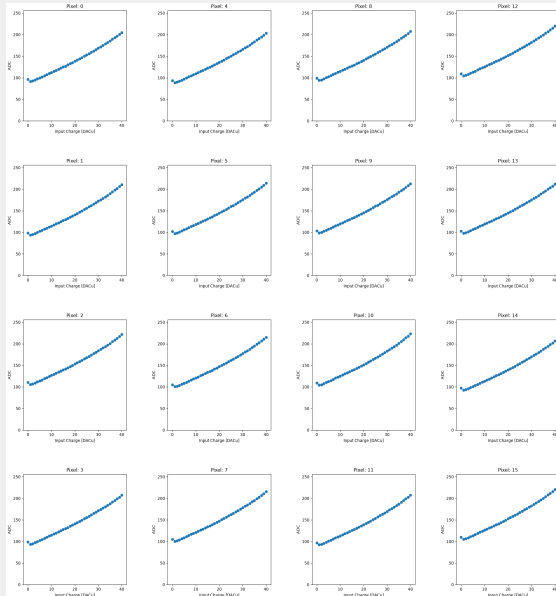
- At a V_{ref} offset of zero, the ADCs of all 16 pixels begin to saturate around 30 DACu of input charge



ADC vs Input Charge

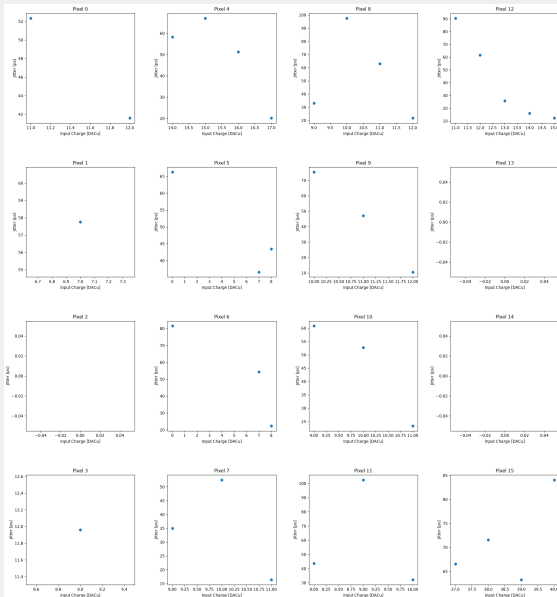
- At a Vref offset of zero, the ADCs of all 16 pixels begin to saturate around 30DACu of input charge

- A Vref subtraction of 64DACu produces a linear relationship with a steeper rise starting around 25DACu



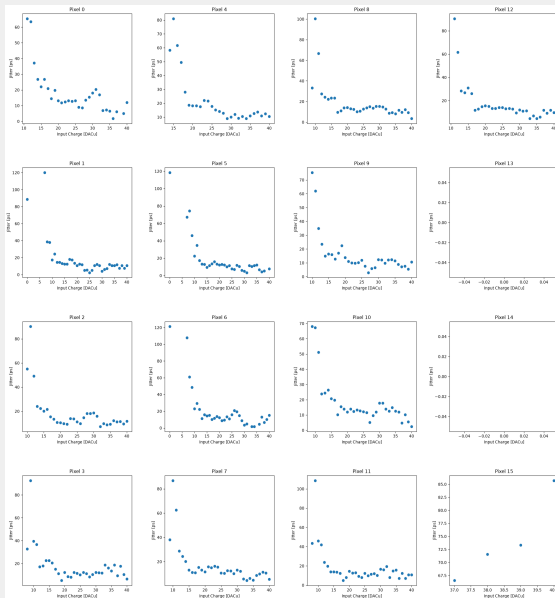
TDC Jitter vs Input Charge

- With zero Vref offset, the TDC when using the "hit bit" to filter results is nonexistent



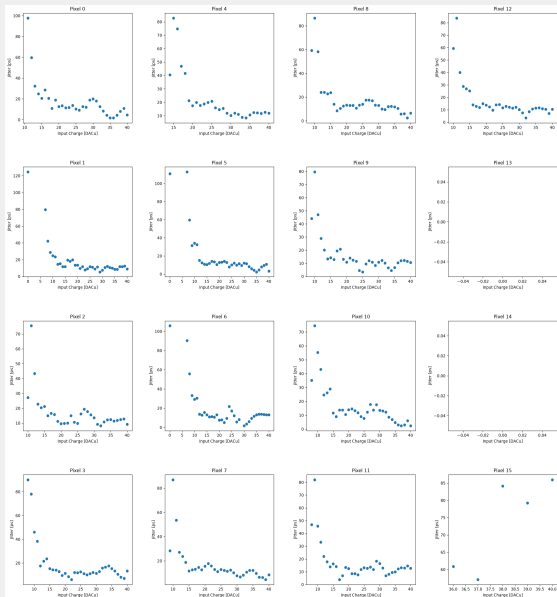
TDC Jitter vs Input Charge

- With zero Vref offset, the TDC when using the "hit bit" to filter results is nonexistent
- **However, filtering for events with single TDC values produces a reasonable result**



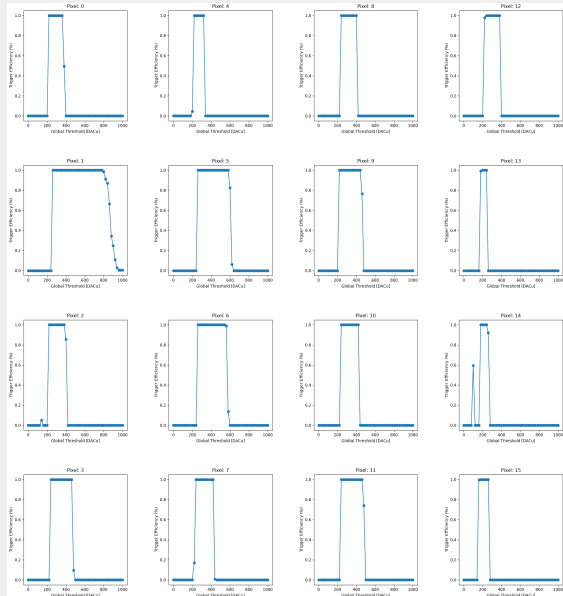
TDC Jitter vs Input Charge

- With zero Vref offset, the TDC when using the "hit bit" to filter results is nonexistent
- However, filtering for events with single TDC values produces a reasonable result
- With Vref set to 64DACu, the jitter looks the same w/ and w/out the hit bit filter



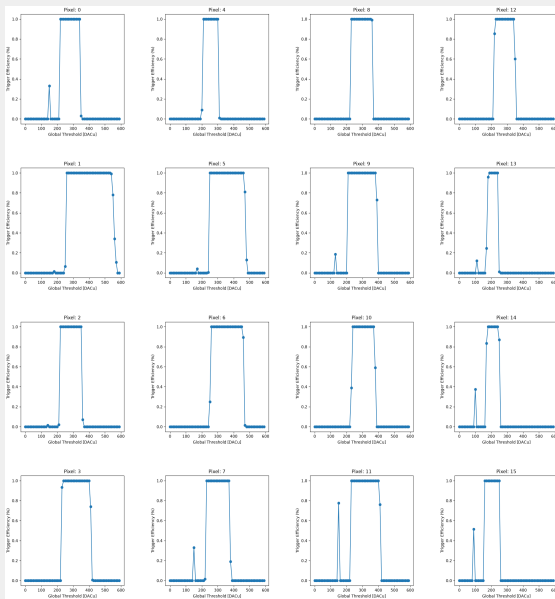
S-Curves

- At an input charge of 20 DACu, the low end of s-curves for most pixels is stable around 200



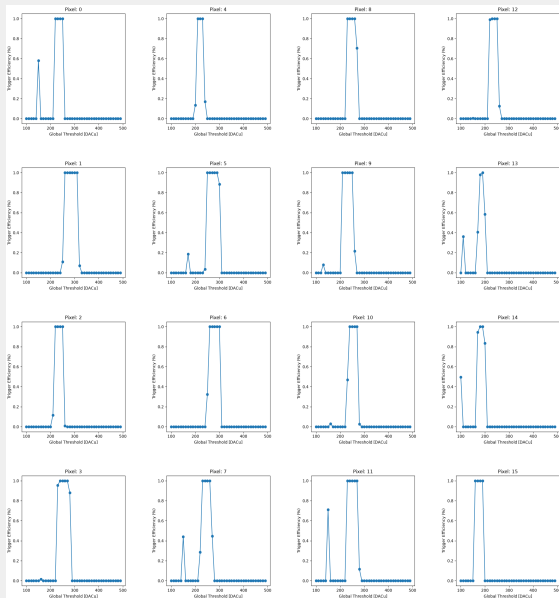
S-Curves

- At an input charge of 20DACu, the low end of s-curves for most pixels is stable around 200
- Reducing the input charge to 15DACu sees an expected narrowing of the s-curve widths



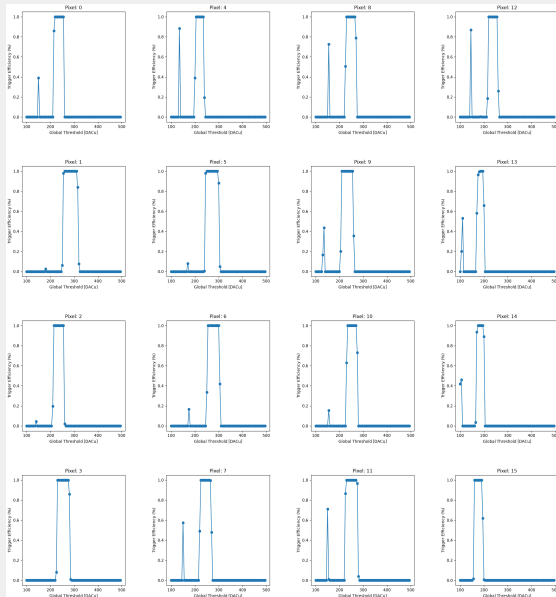
S-Curves

- At an input charge of 20DACu, the low end of s-curves for most pixels is stable around 200
- Reducing the input charge to 15DACu sees an expected narrowing of the s-curve widths
- Input charge of 6DACu



S-Curves

- At an input charge of 20DACu, the low end of s-curves for most pixels is stable around 200
- Reducing the input charge to 15DACu sees an expected narrowing of the s-curve widths
- Input charge of 6DACu
- Input charge of 6DACu with smaller steps sizes



What's Next?

- Reliably getting data from EICROC0A means we can start to carefully benchmark it's performance
- Next up is to prepare a large sensor on a Fermilab style board for testing with ^{90}Sr and in the TCT setup