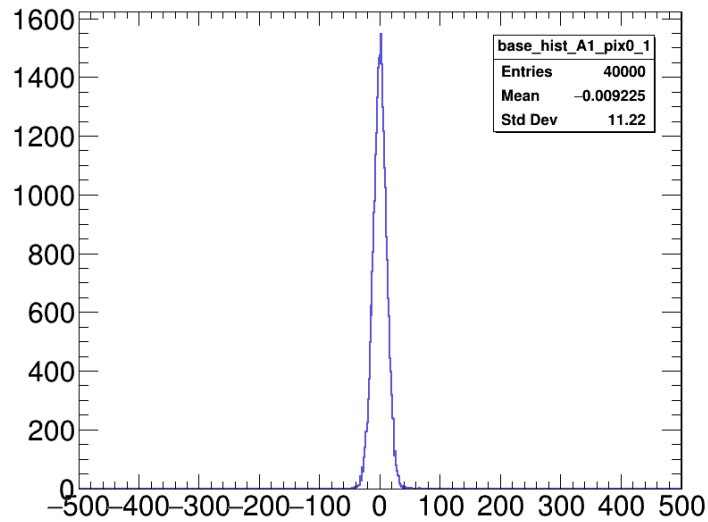

Weekly Reports

Chen Liejian
4 May 2017

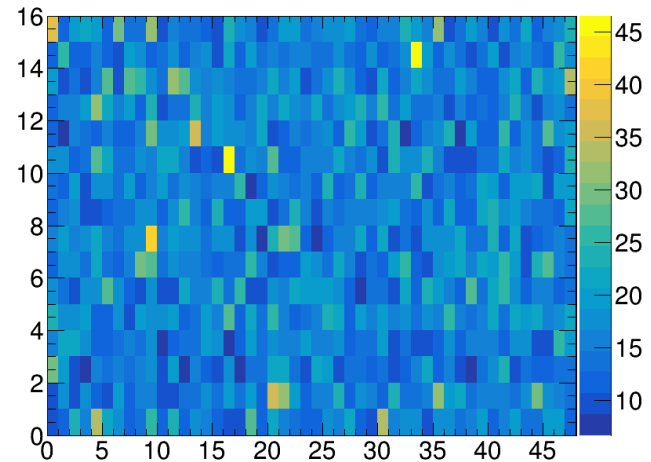
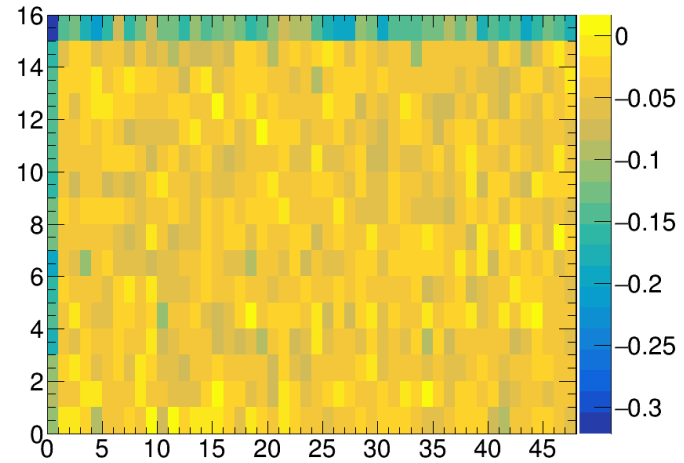
Noise and Pedestal



$$r_k^i = s_k^i + p_k^i + c^i$$

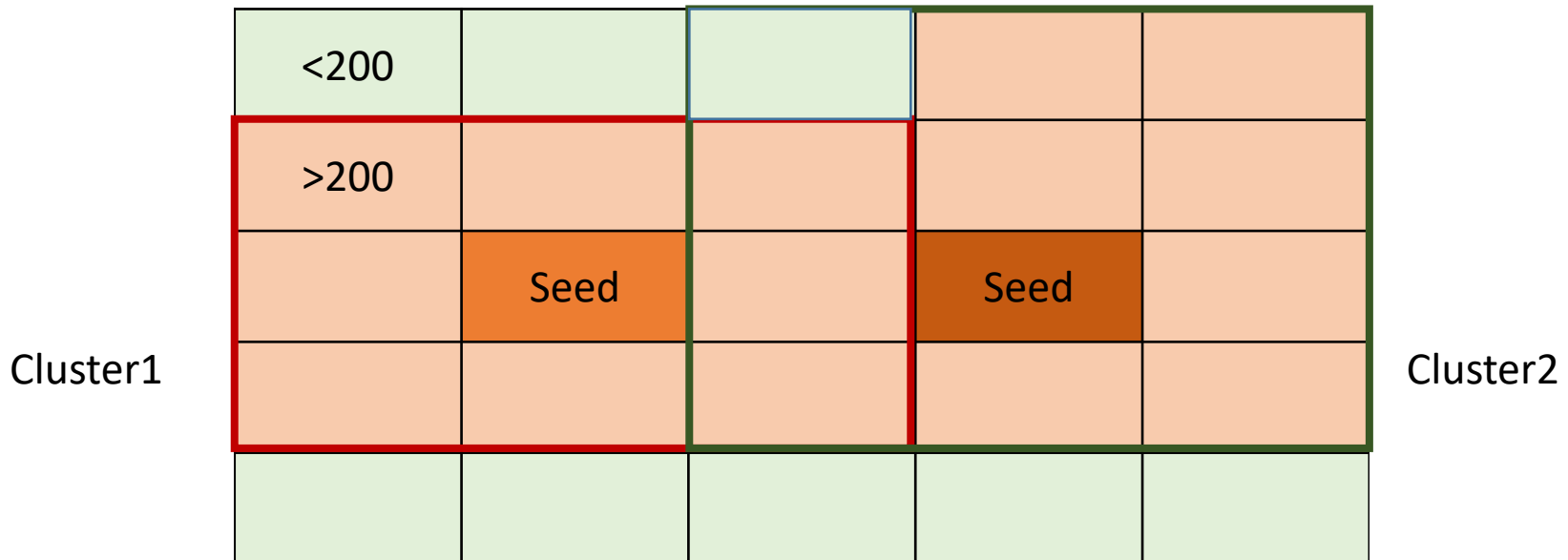
$$p_{k,N} = \frac{1}{N} \sum_{i=1}^N (r_k^i - s_k^i) = \frac{1}{N} \sum_{i=1}^N \tilde{r}_k^i \quad p_{k,N}^{\text{est}} = \frac{1}{N'} \sum_{j=1}^{N'} \tilde{r}_k^j$$

$$n_{k,N} = \sqrt{\frac{N'}{N' - 1}} \sqrt{\left(\frac{1}{N'} \sum_{j=1}^{N'} (\tilde{r}_k^j)^2 \right) - (p_{k,N}^{\text{est}})^2}$$



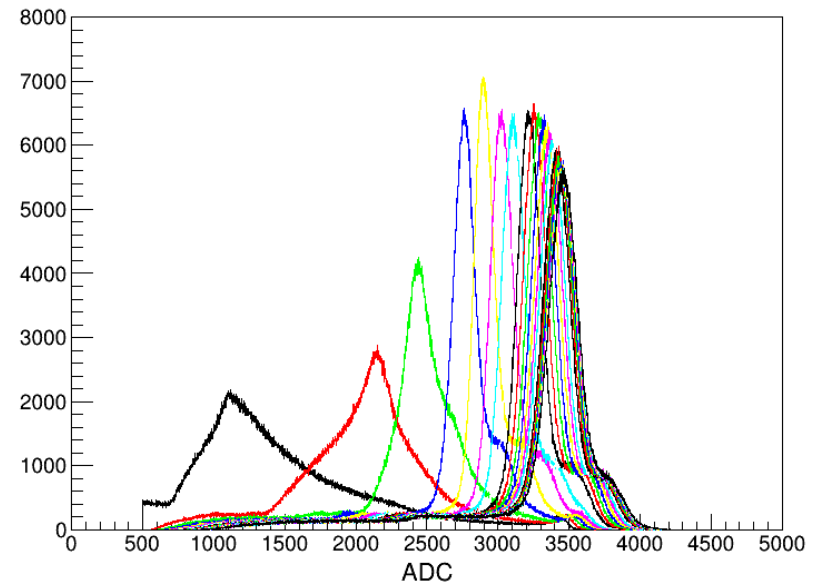
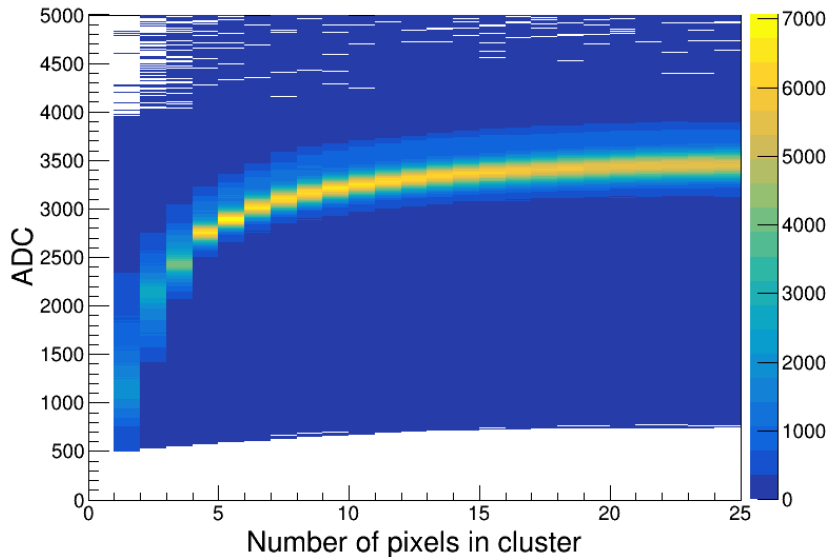
Seed/Cluster Selection

- Seed
 - $S_{\text{seed}} > 500$ ADC
 - $S_{\text{seed}} > S_{\text{neighbour}}$
 - bad pixel masking
 - common mode shift correction
 - gain correction
- Cluster
 - $S_{\text{pixel}} > 200$ ADC
 - Pile up subtractionor
 - Fix window



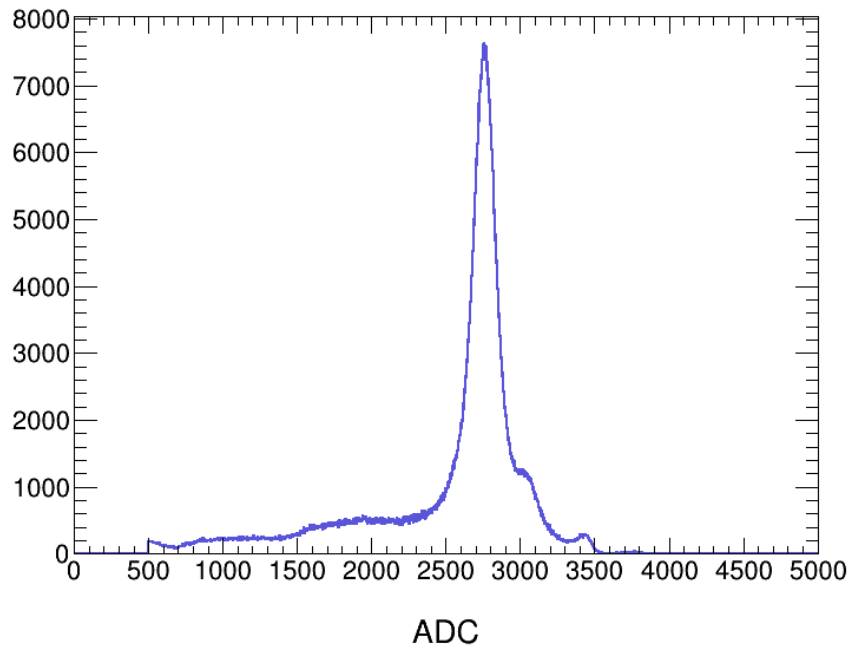
Cluster Multiplicity

cluster signal on the pixel multiplicity can be studied
by sorting the pixels of each 5×5 pixel cluster

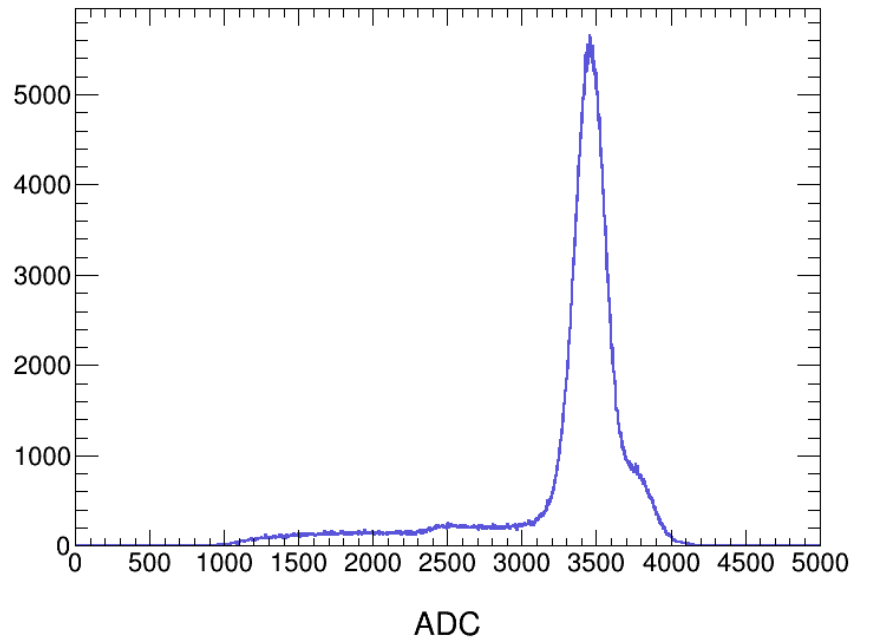


Cluster Results

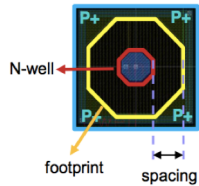
Single pixel cut



Fix Window



MIPS CCE



Sector	Diode surface	Footprint
A1	$4 \mu\text{m}^2$	$30 \mu\text{m}^2$
A2	$8 \mu\text{m}^2$	$30 \mu\text{m}^2$
A3	$15 \mu\text{m}^2$	$30 \mu\text{m}^2$

