

Diffusion

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Diffusion

- Can be determined from Fe55 data analyzing “spread” of clusters
 - Conversions happen at all depths but probability to convert near window ~ 30 times higher than near gates
- Discussed in detail in a sensor meeting
<https://confluence.slac.stanford.edu/display/LSSTCAM/2012.12.07>
- Three analysis techniques:
 - Ratio [central pixel]/[average of (3x3) matrix] (Andy R)
 - 2D shape fit (Ivan Kotov)
 - PSF parameters in SExtractor \rightarrow diffusion (Jim Frank)
- All gave consistent results: diffusion sigma ~ 3 -4 μm

PhoSim comparison

- Spot projector data analysis (Paul, John, En-Hsin)
- Agrees with prediction after subtraction of 14.6 μm
 - $4 \mu\text{m} \times 2.35 = 9.4 \mu\text{m}$
- BNL spots: FWHM ~ 2 pixels = 20 μm ; from Paul's edge roll-off measurements note :

