

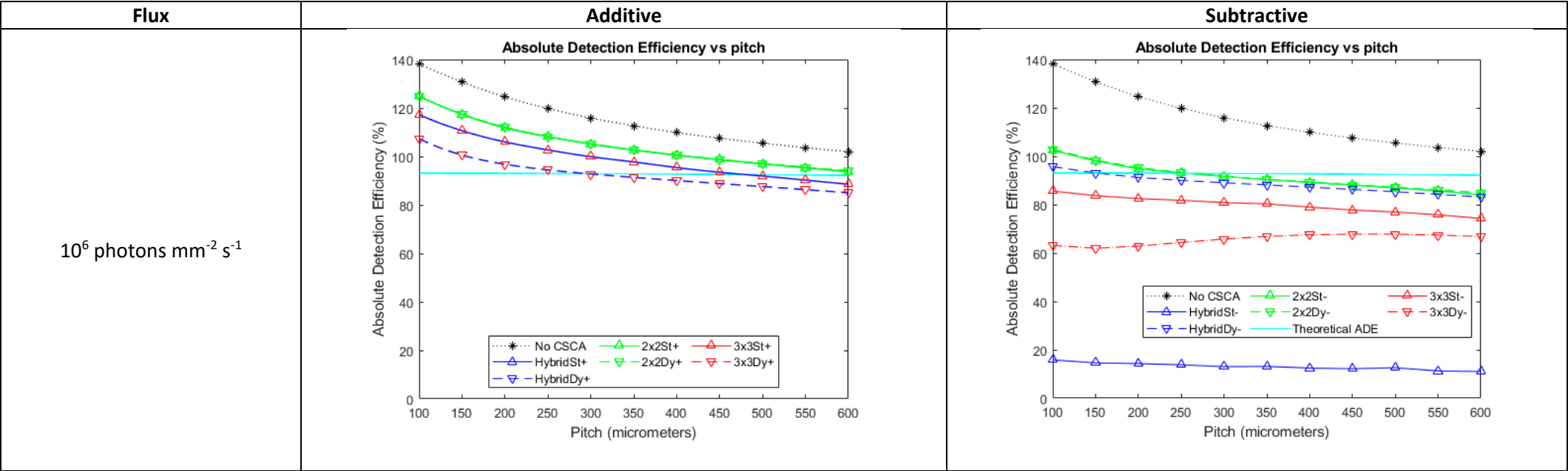
To Reconstruct or Discard: A Comparison of Additive and Subtractive Charge Sharing Correction Algorithms at High and Low X-Ray Fluxes

Oliver L. P. Pickford Scienti * and Dimitra G. Darambara

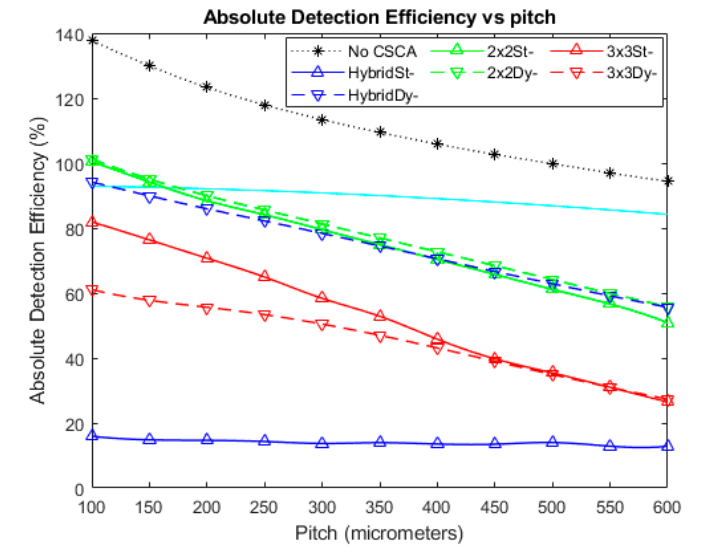
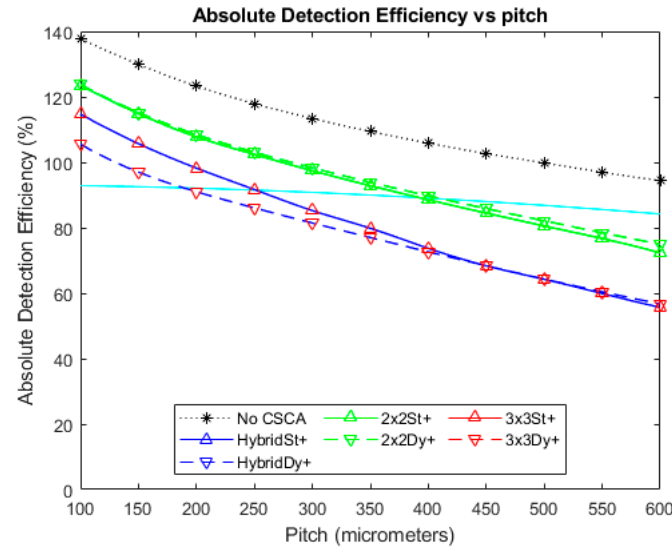
Joint Department of Physics, Institute of Cancer Research and Royal Marsden NHS Foundation Trust, London SM2 5NG, UK; dimitra.darambara@icr.ac.uk

* Correspondence: olie.scienti@icr.ac.uk

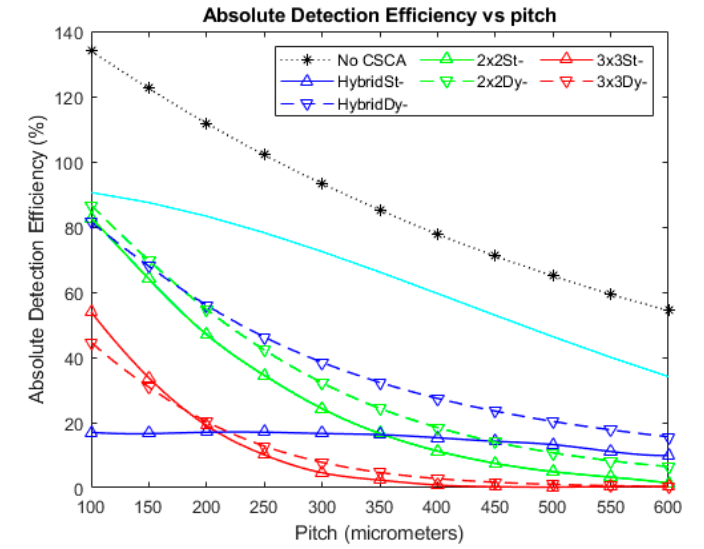
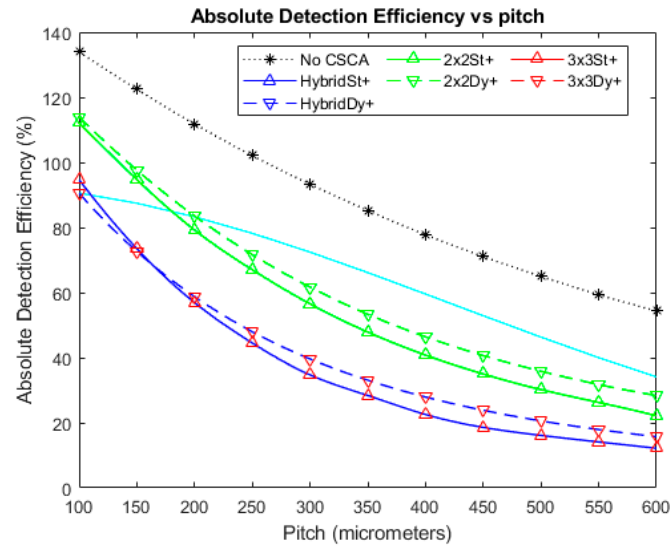
ADE



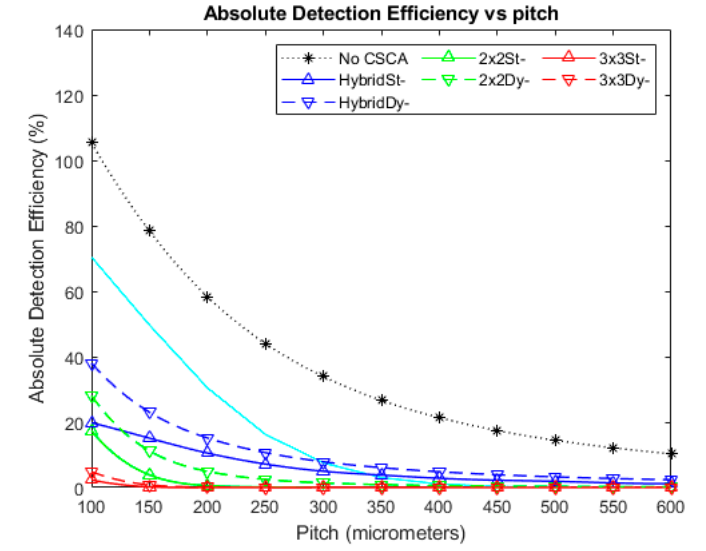
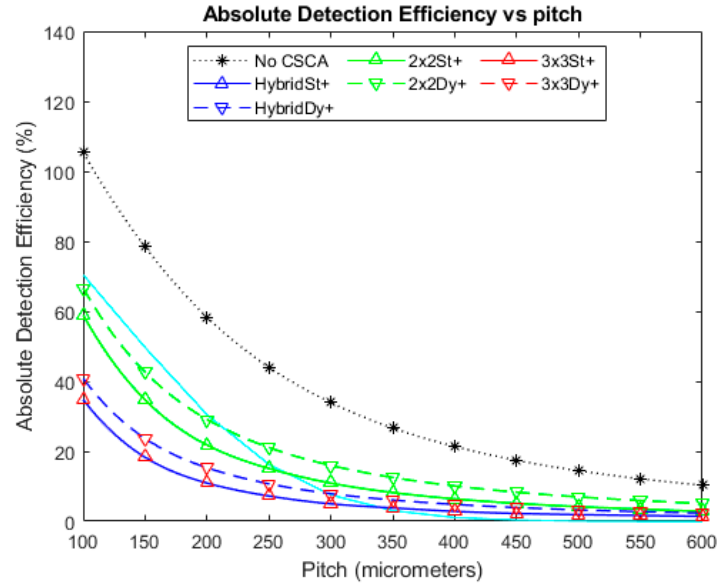
10^7 photons $\text{mm}^{-2} \text{s}^{-1}$



10^8 photons $\text{mm}^{-2} \text{s}^{-1}$



10^9 photons $\text{mm}^{-2} \text{s}^{-1}$



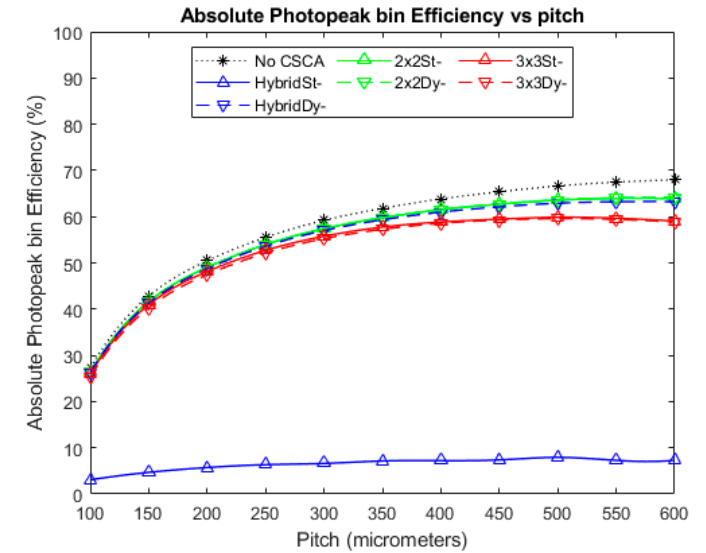
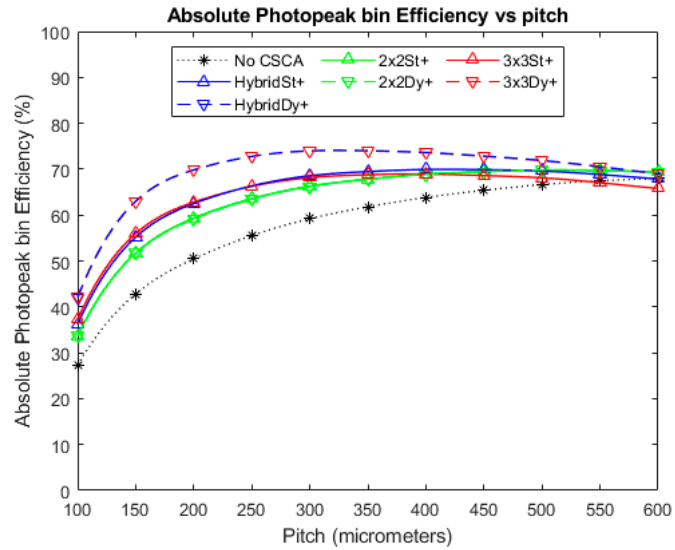
APE

Flux

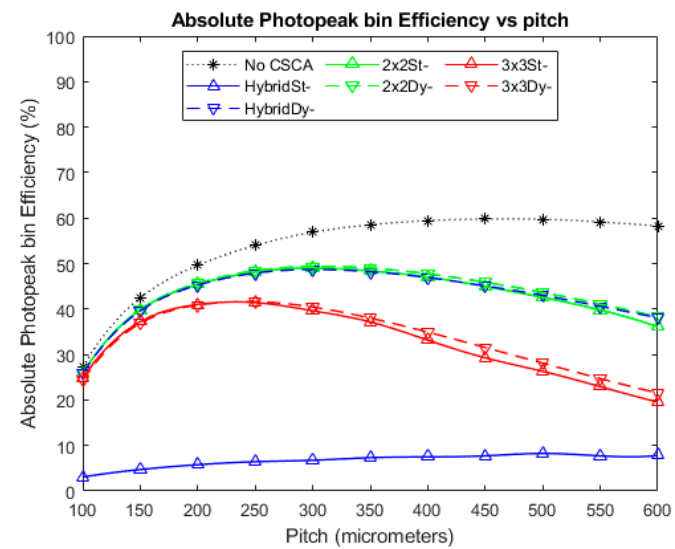
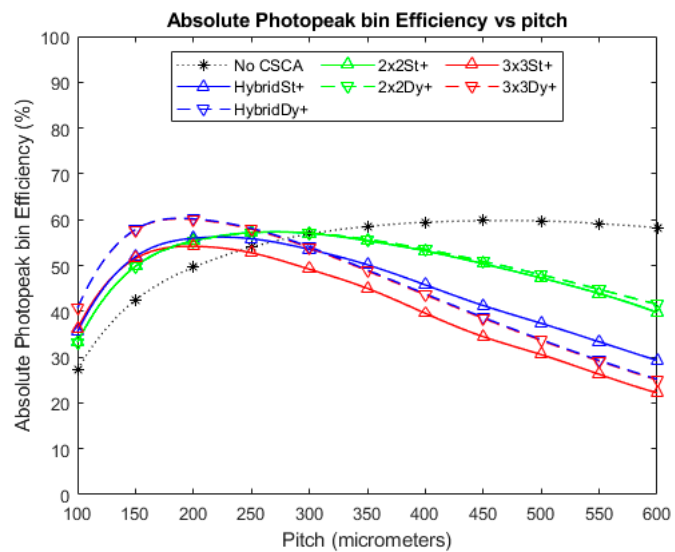
Add

Sub

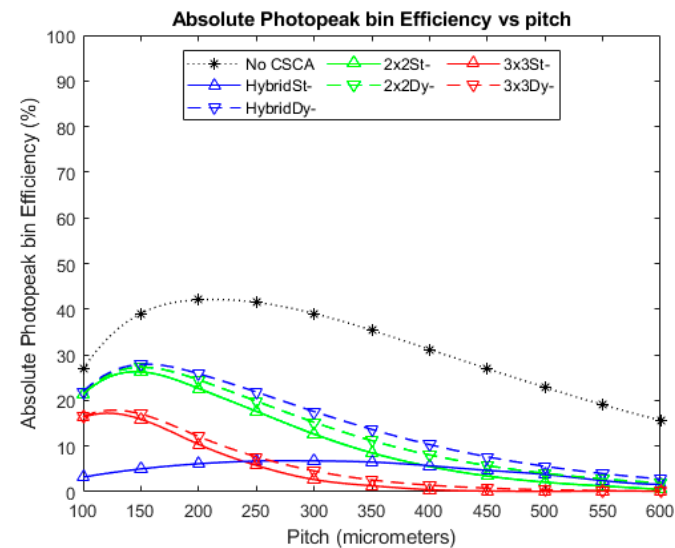
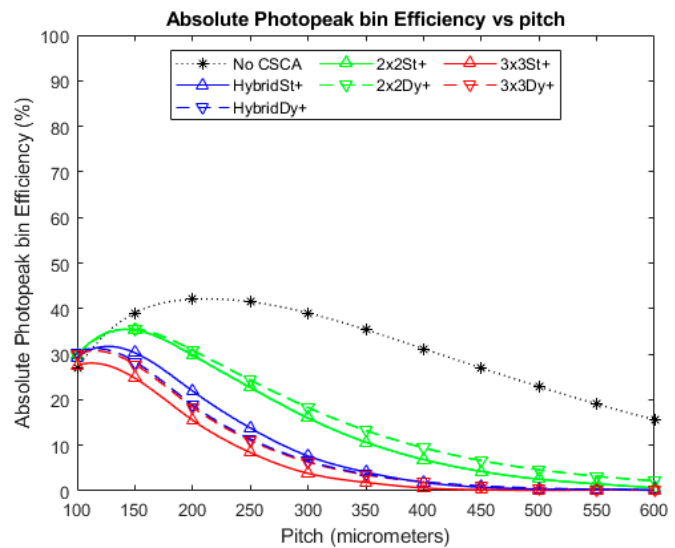
10^6 photons $\text{mm}^{-2} \text{s}^{-1}$



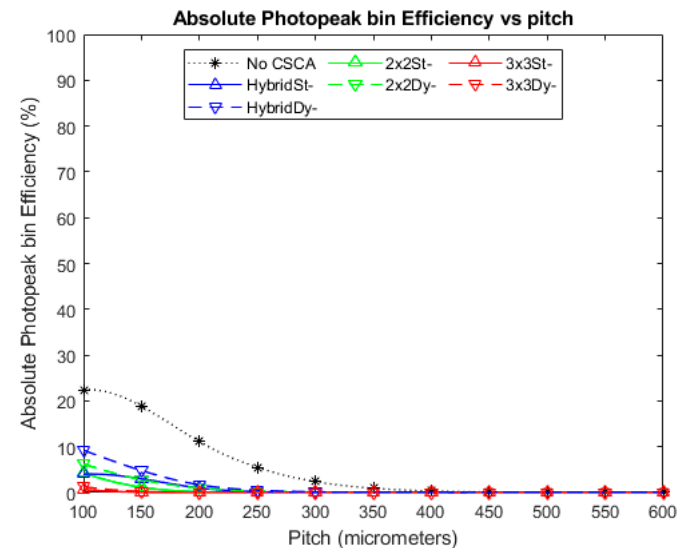
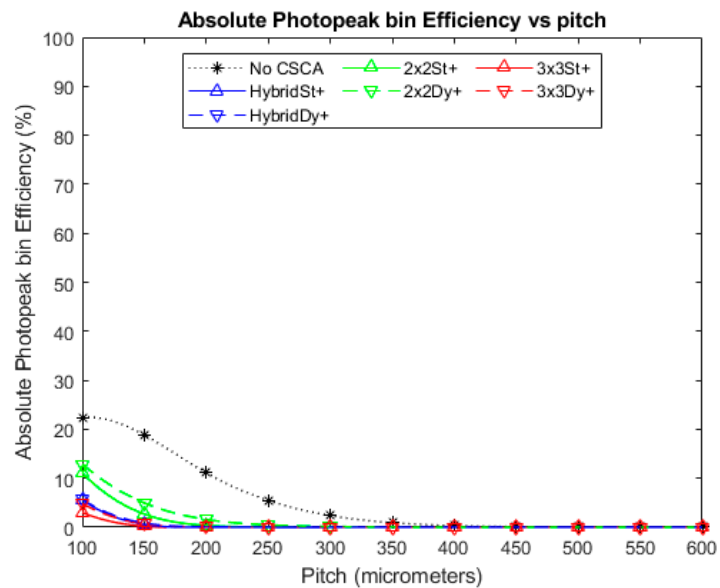
10^7 photons $\text{mm}^{-2} \text{s}^{-1}$



10^8 photons $\text{mm}^{-2} \text{s}^{-1}$



10^9 photons $\text{mm}^{-2} \text{s}^{-1}$



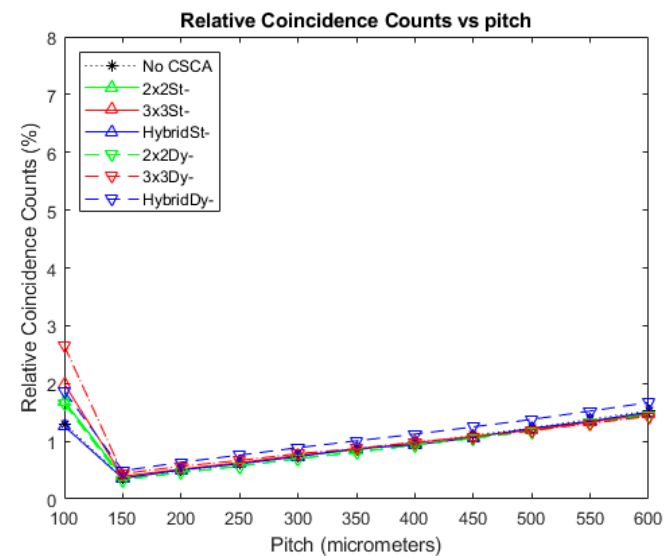
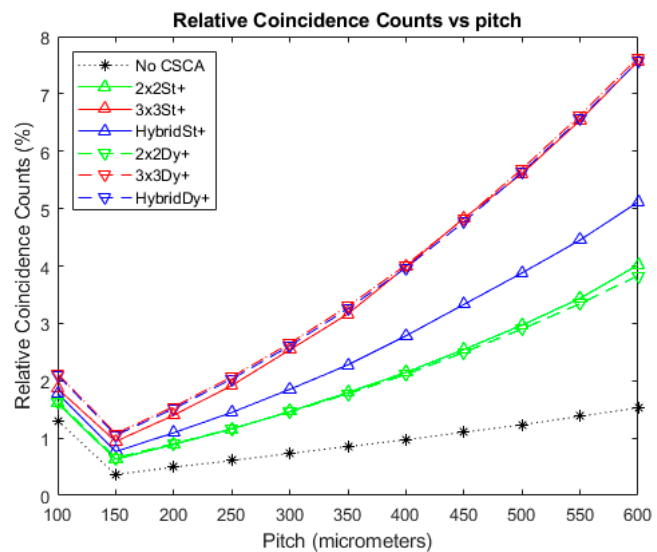
RCC

Flux

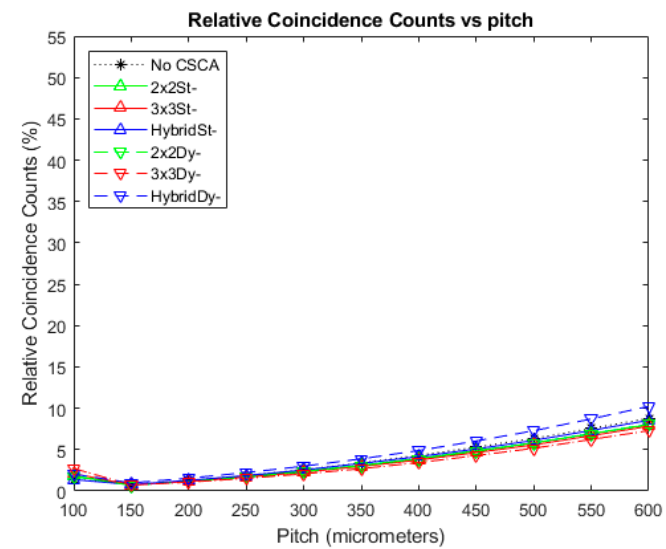
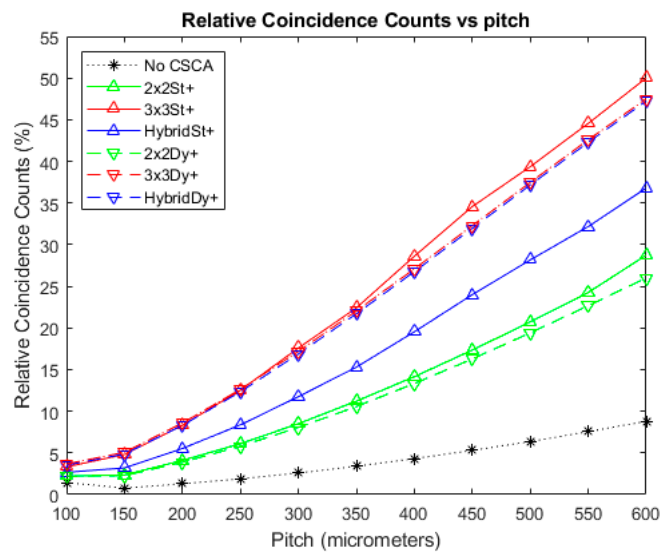
Add

Sub

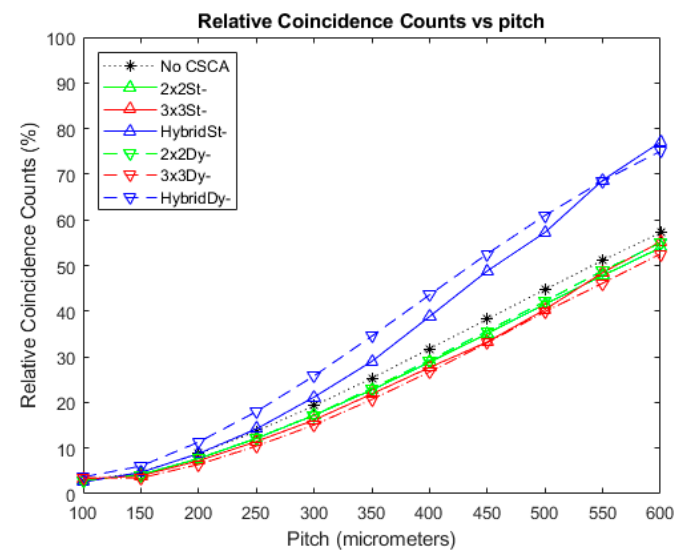
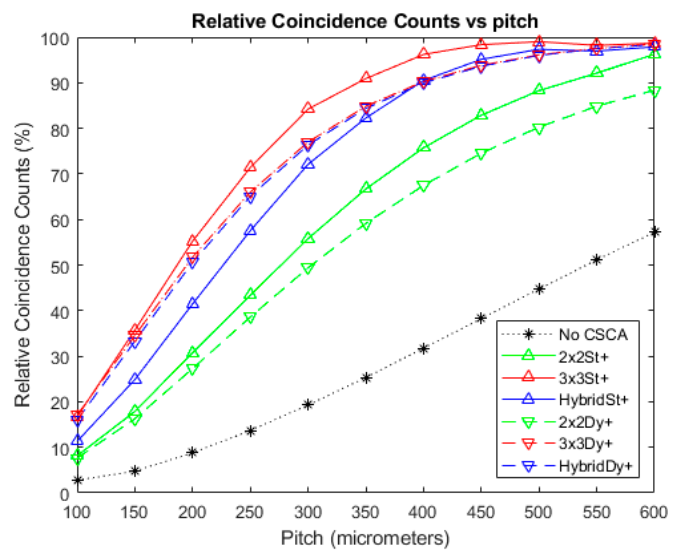
10^6 photons $\text{mm}^{-2} \text{s}^{-1}$



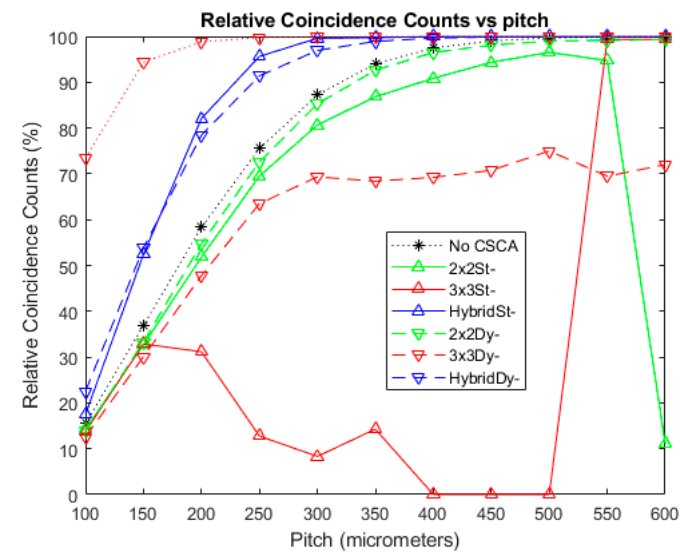
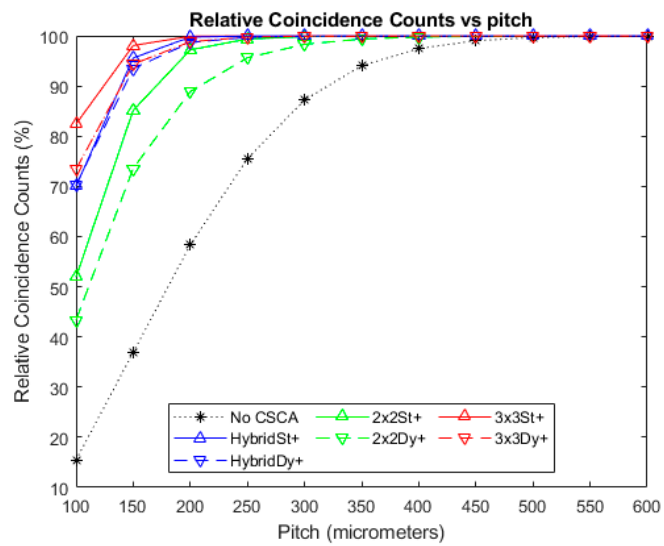
10^7 photons $\text{mm}^{-2} \text{s}^{-1}$



10^8 photons $\text{mm}^{-2} \text{s}^{-1}$



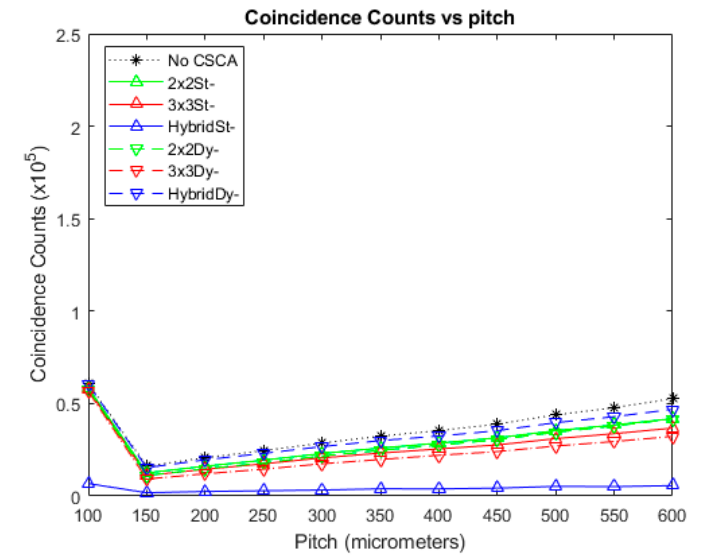
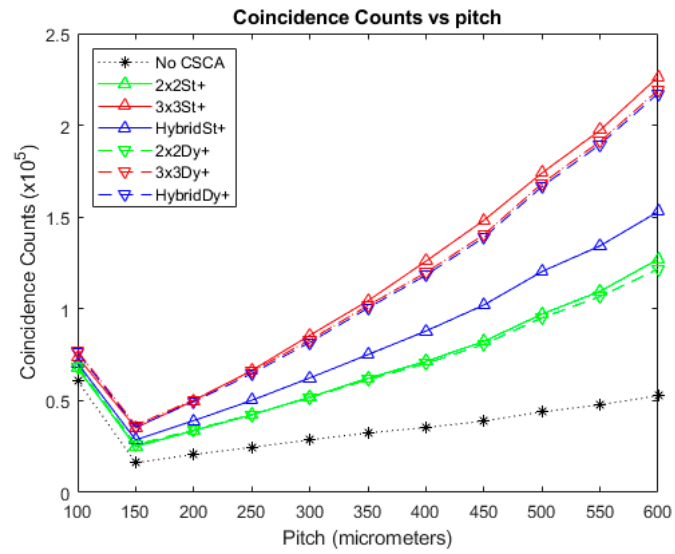
$10^9 \text{ photons mm}^{-2} \text{ s}^{-1}$



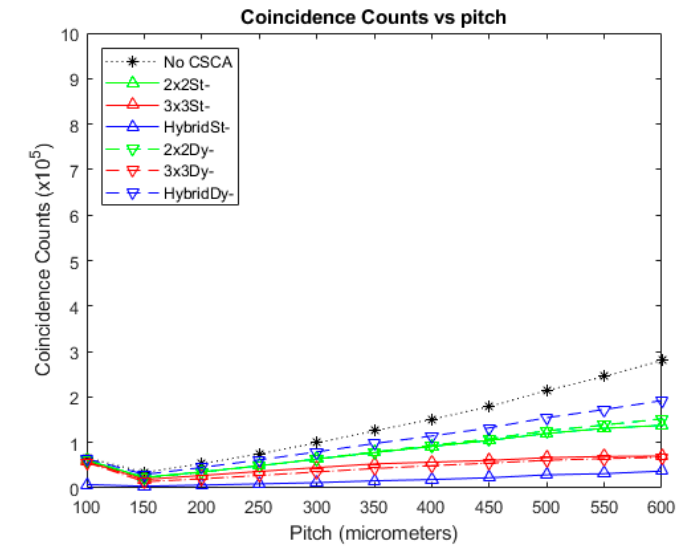
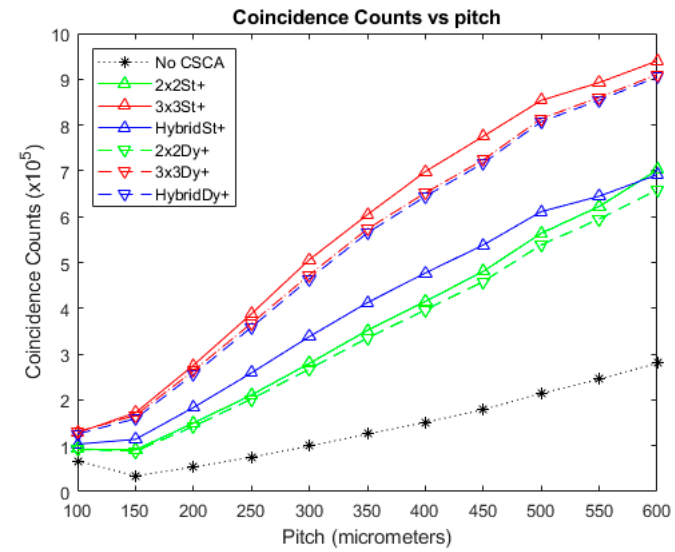
Total counts in coincidence bin

Flux	Add	Sub
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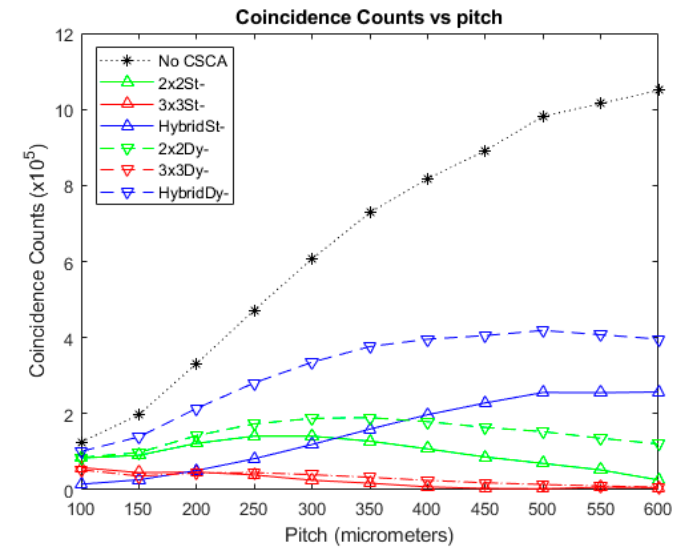
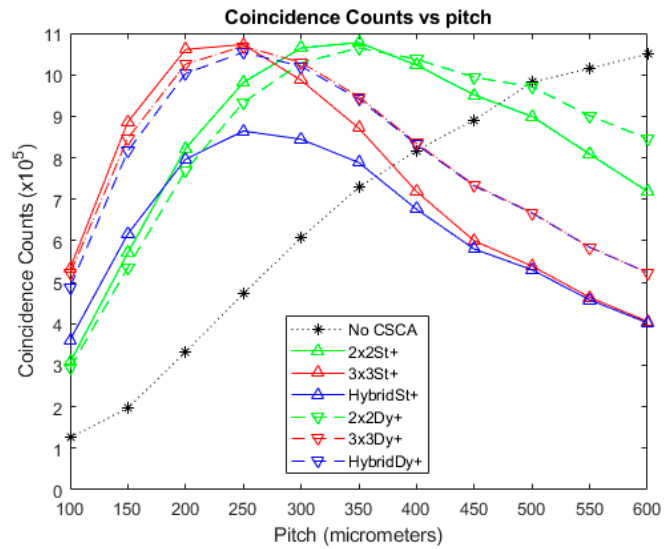
10^6 photons $\text{mm}^{-2} \text{s}^{-1}$



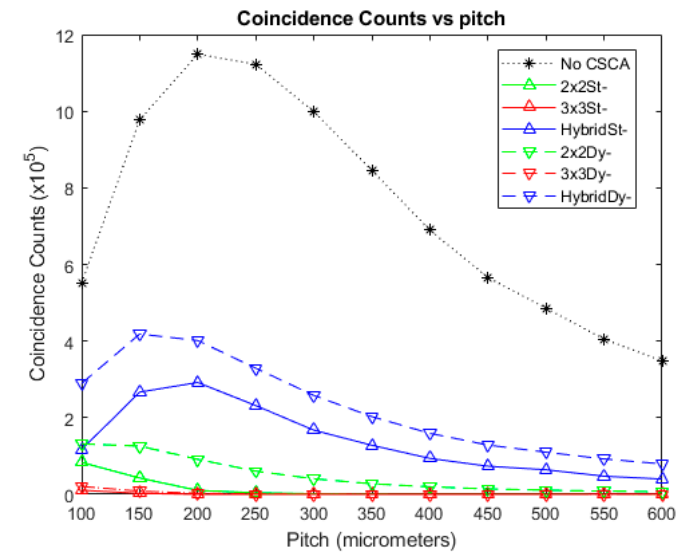
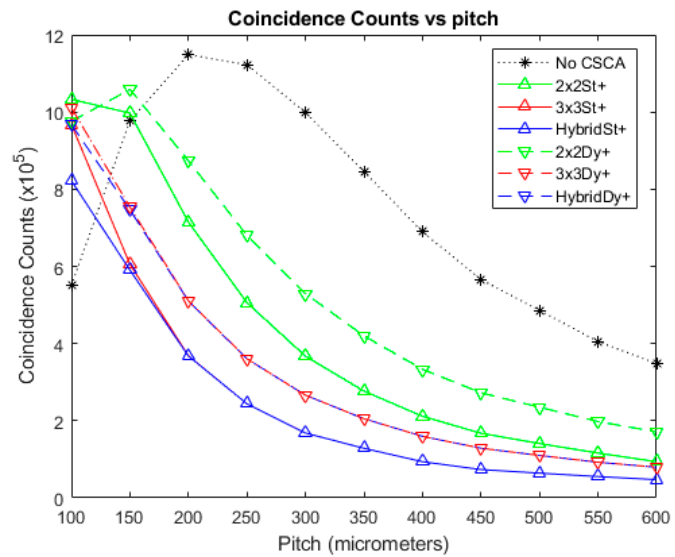
10^7 photons $\text{mm}^{-2} \text{s}^{-1}$



$10^8 \text{ photons mm}^{-2} \text{ s}^{-1}$



$10^9 \text{ photons mm}^{-2} \text{ s}^{-1}$



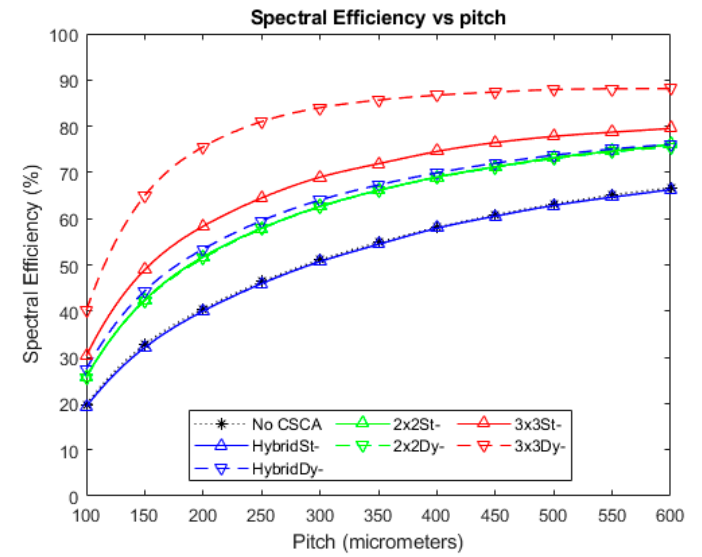
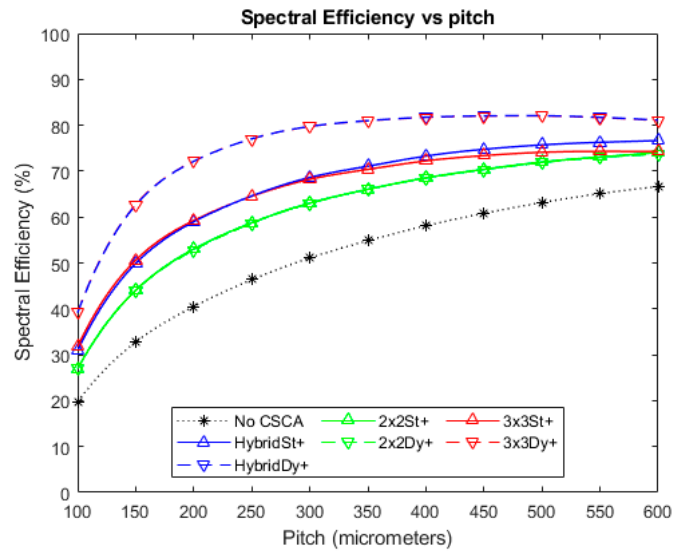
BSE

Flux

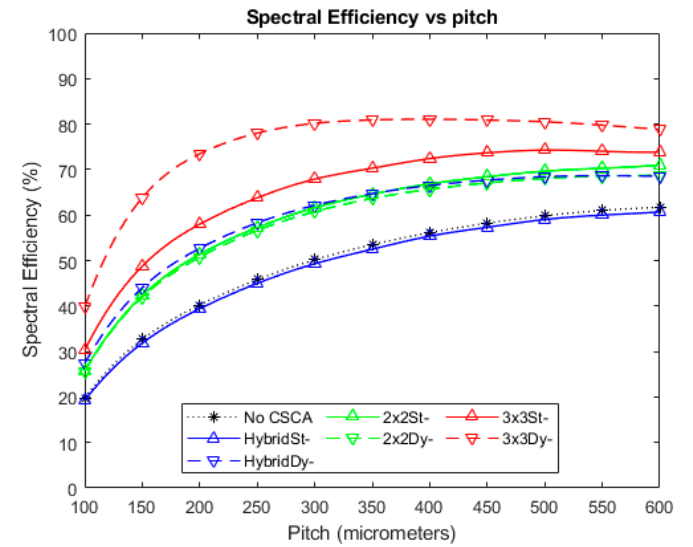
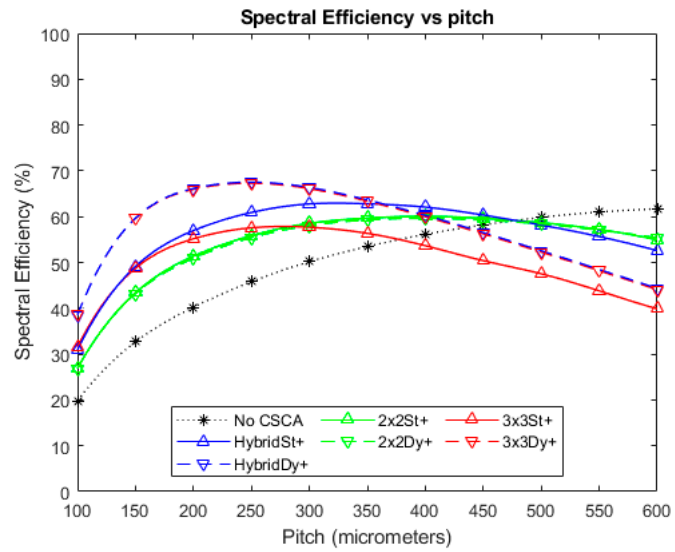
Add

Sub

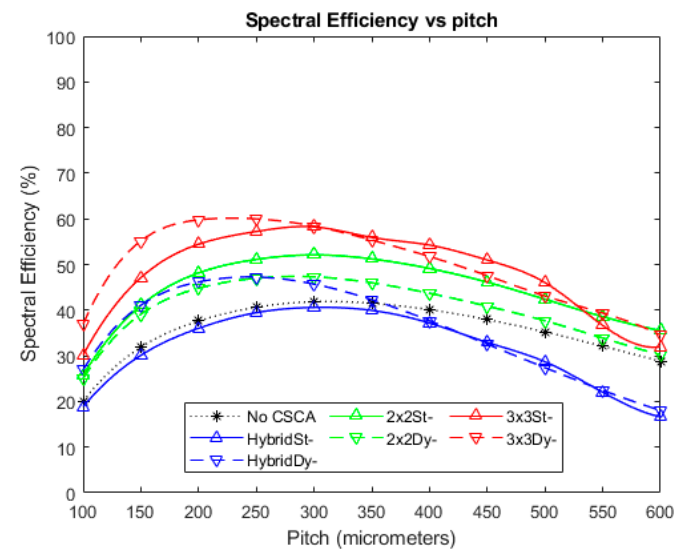
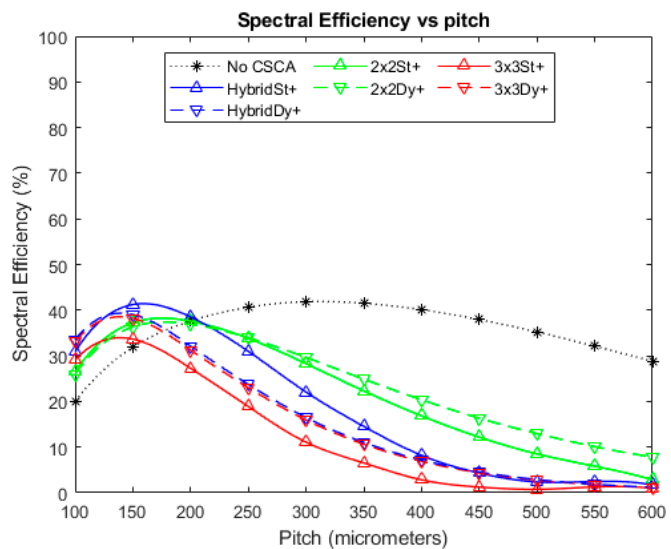
10^6 photons $\text{mm}^{-2} \text{s}^{-1}$



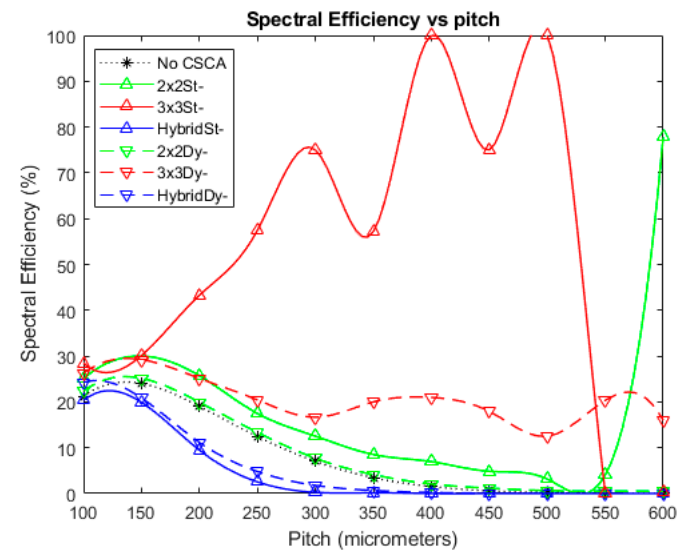
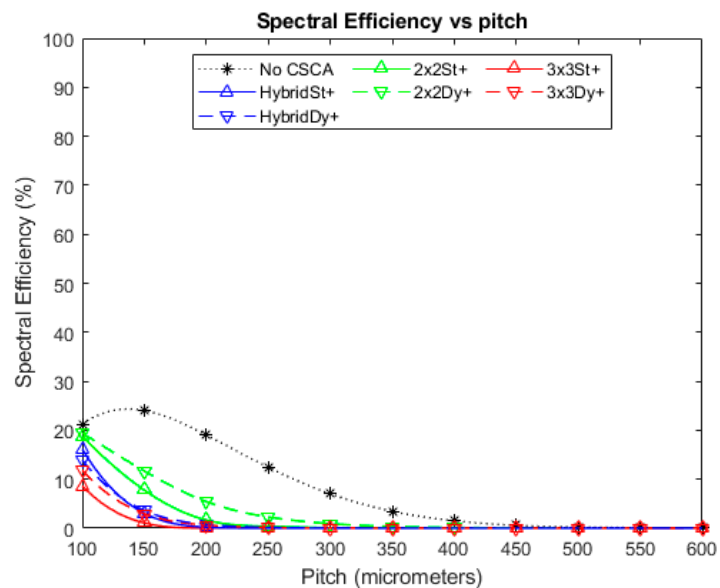
10^7 photons $\text{mm}^{-2} \text{s}^{-1}$



$10^8 \text{ photons mm}^{-2} \text{ s}^{-1}$



$10^9 \text{ photons mm}^{-2} \text{ s}^{-1}$



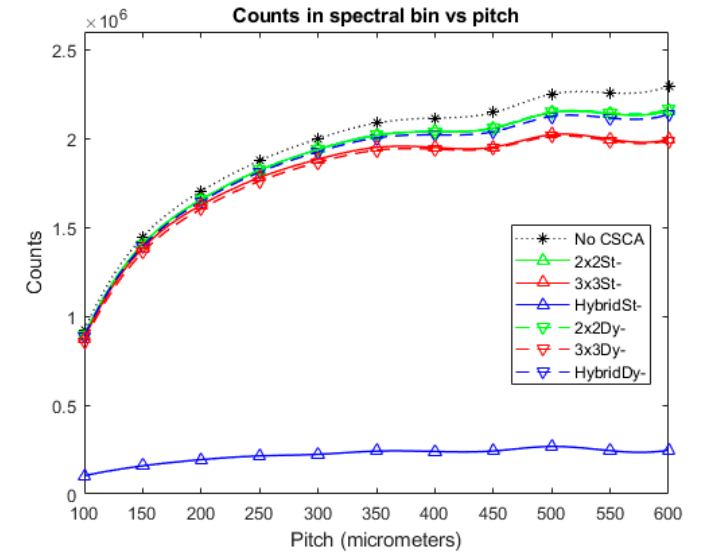
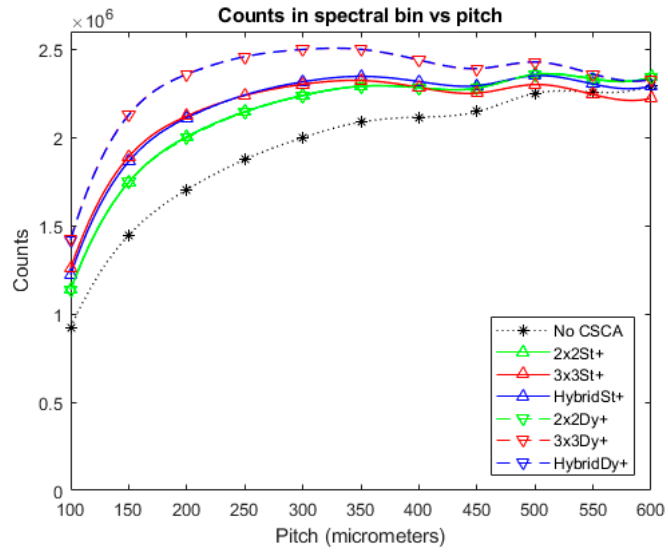
Total counts in photopeak bin

Flux

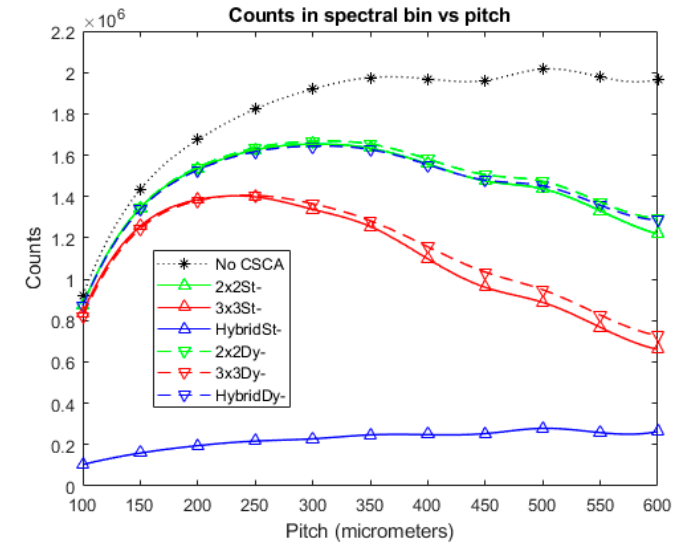
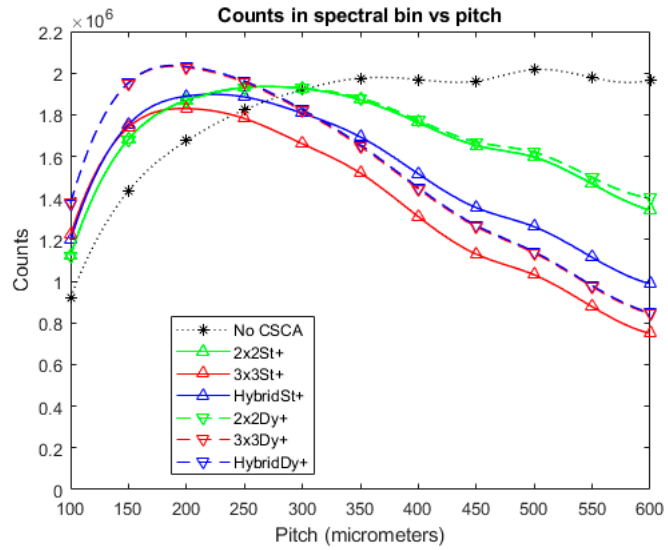
Add

Sub

10^6 photons $\text{mm}^{-2} \text{s}^{-1}$



10^7 photons $\text{mm}^{-2} \text{s}^{-1}$



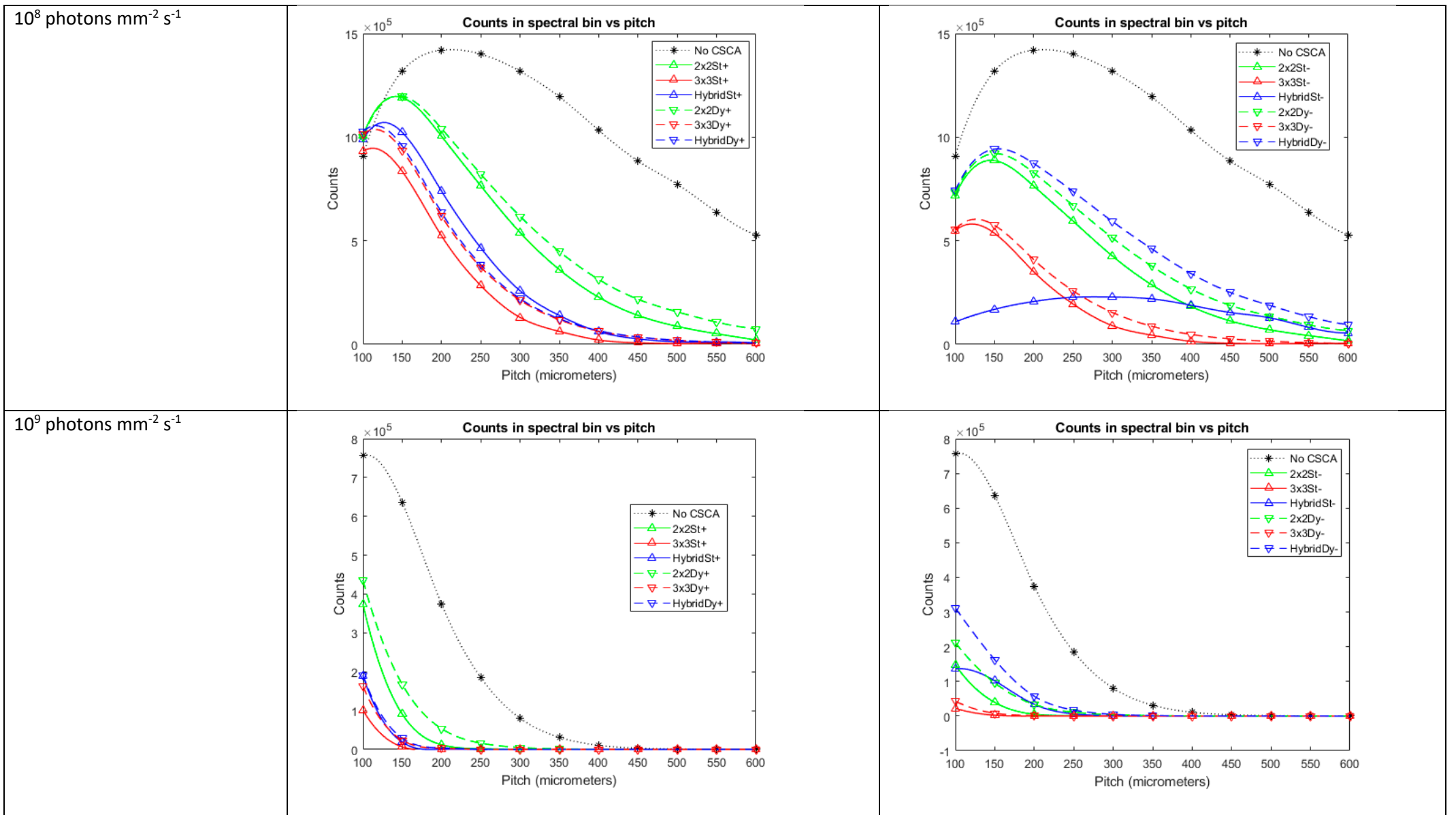


Figure S1: Plots showing how APE, ADE, BSE, RCC, ‘total counts in coincidence bin’ and ‘total counts in photopeak bin’ vary as a function of pixel pitch for all x-ray fluxes simulated in this work.