

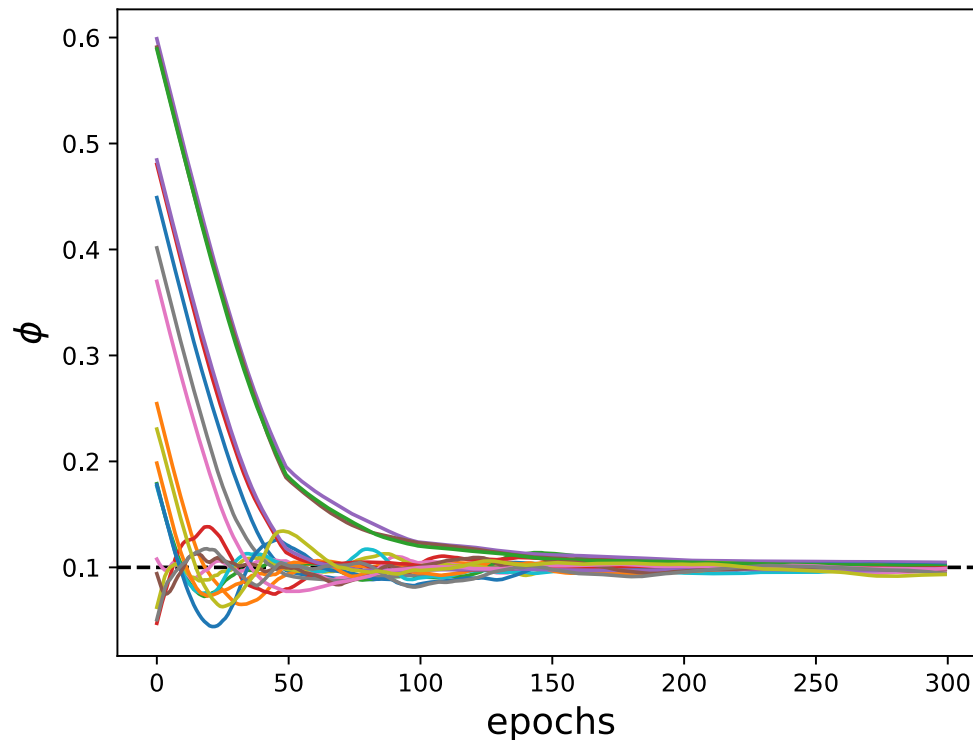
# Simulation of the multi-view imaging system with differentiable ray tracing

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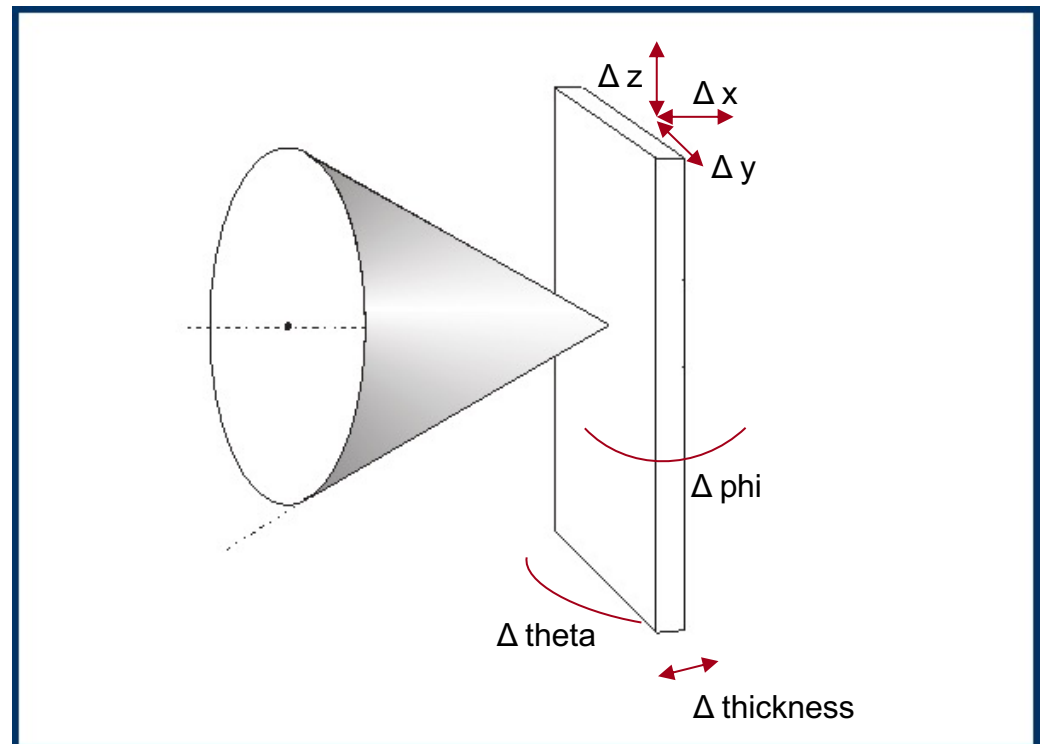
# General updates

- Simulator speed up.
- Ray tracing & photon mapping produce similar images.
  - Ray tracing will speed up 3d reconstruction.
- MLE fit.



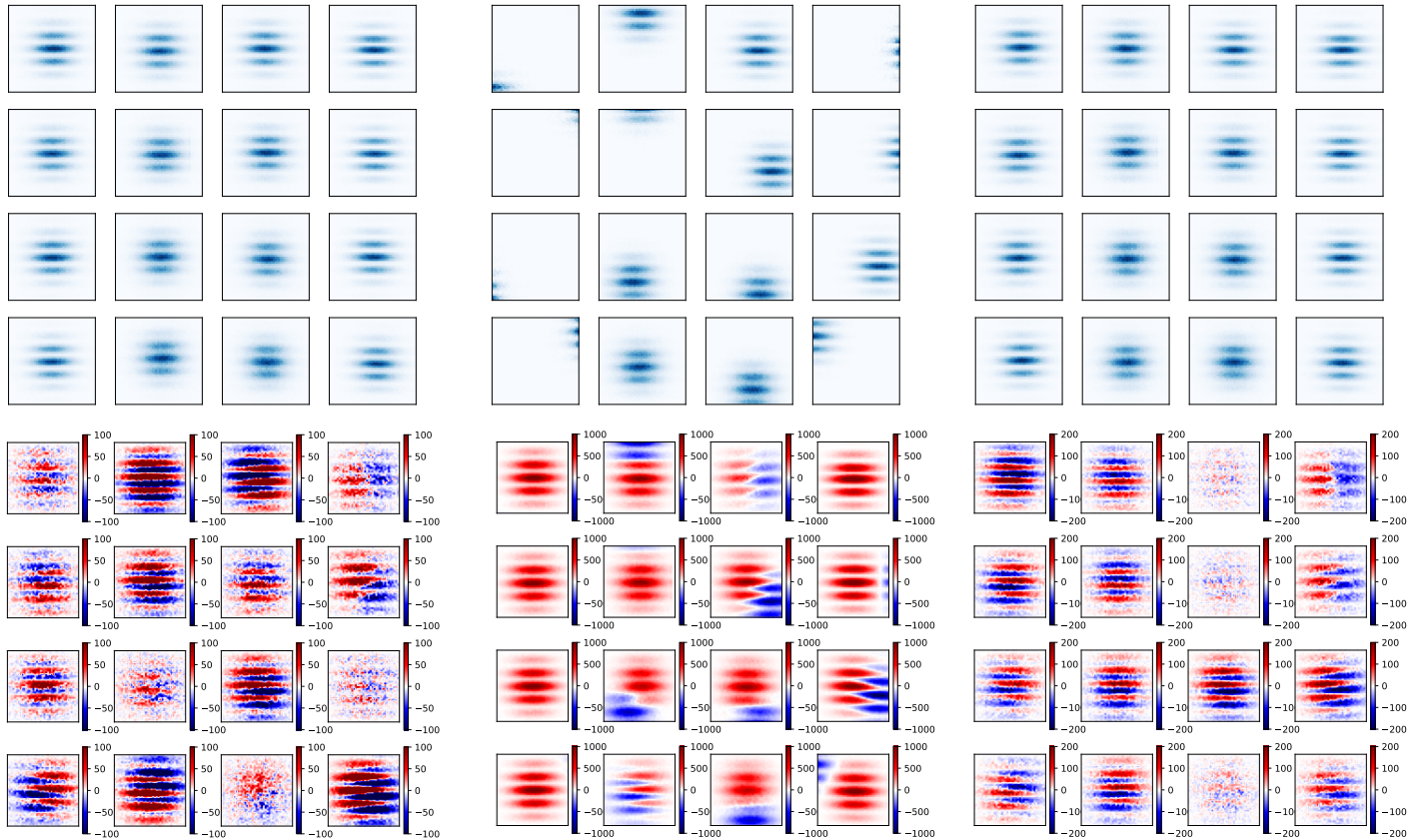
# Mirror misplacement

- Shift  $\mathcal{O}(\pm 0.2mm)$ .
  - $\Delta x, \Delta y, \Delta z$
- Shift along the normal  $\mathcal{O}(\pm 0.25mm)$ .
  - $\Delta$  thickness
- Rotations  $\mathcal{O}(\pm 1^\circ)$ .
  - $\Delta \theta, \Delta \Phi$



# Mirror misplacement

- Misplacement will introduce:
  - Horizontal & vertical shifts on the image.
  - Blur.



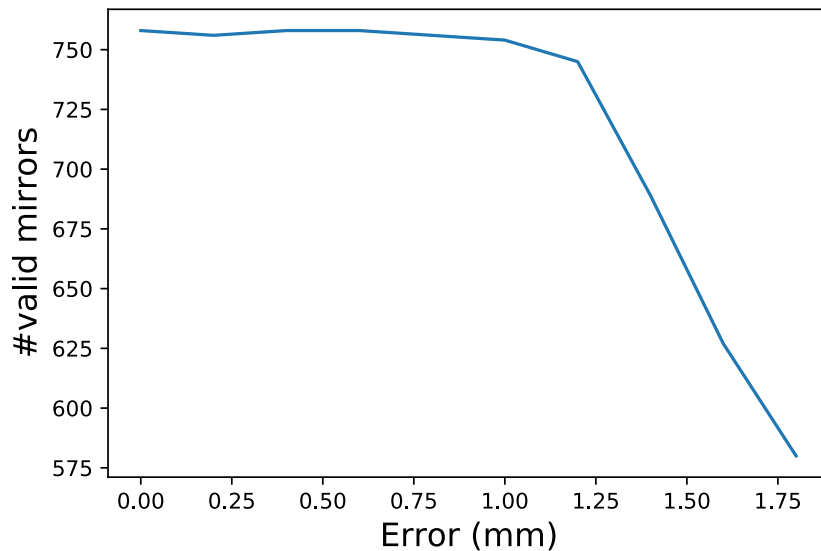
$\Delta x, \Delta y, \Delta z$

$\Delta \theta, \Delta \Phi$

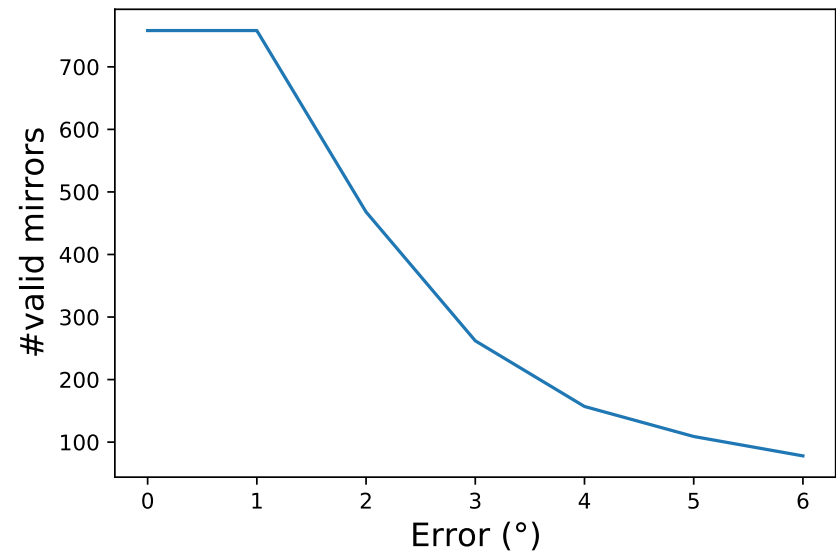
$\Delta$  thickness

# Mirror misplacement

- Mirrors with large displacements won't reflect light to the lens.



$\Delta x, \Delta y, \Delta z$



$\Delta \theta, \Delta \Phi$