Transmission Scan.

\[ p(d) = I_0 e^{-\mu x} \]

\[ p(\text{Coincidence}) = I_1 \cdot I_2 = I_0 e^{-\mu x} e^{-\mu (L-x)} = I_0 e^{-\mu L} \]

Let \( \mu = \mu(x) \)

So \( p(\text{Coincidence}) = I_0 e^{-\int_0^L \mu(x) dx} \)

\[ \text{CT scan} \]

\[ \text{PET w/o m} \]

\[ \text{correct for } m \]

Map of \( \mu(x,y,z) \)

Why?
Partial Vol.

2 phenomena

1. Hot spot

Ideal scanner sees (along line X)

Non-ideal scanner sees either ---

What is diff?

Never recover true conc in small object if diam ≤ 2.5 × Resolut, where Resolut = FWHM
"FWHM"

measure of spread of dot in image.