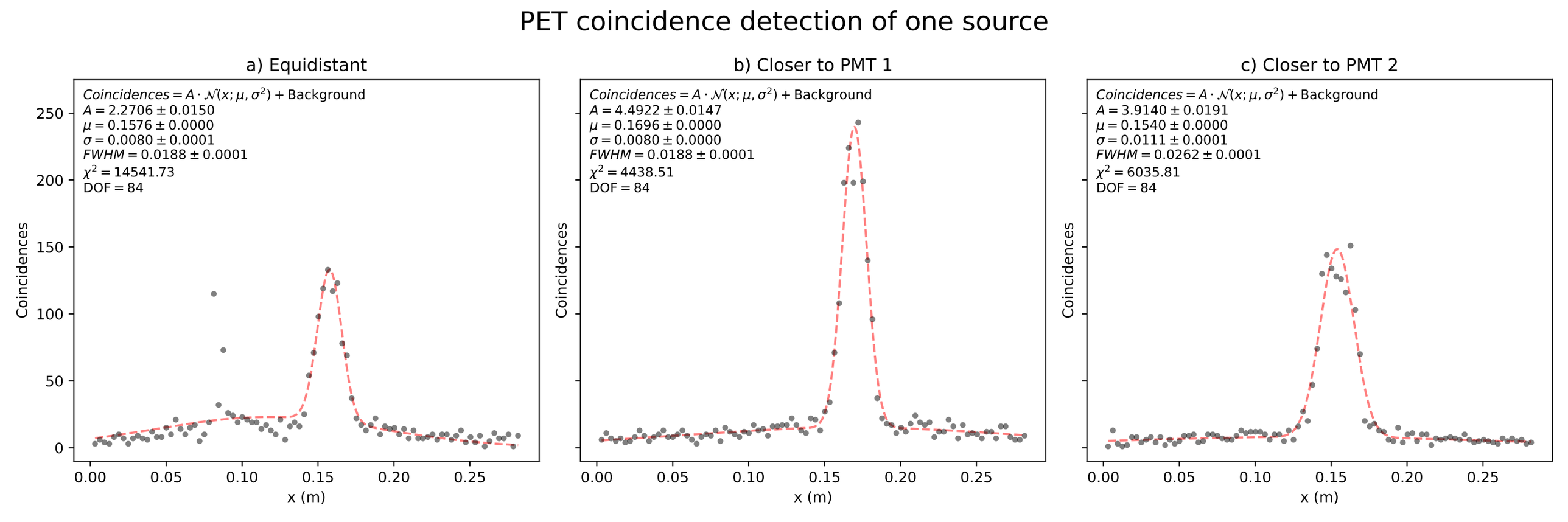
PET coincidence detection of one source
a) Equidistant
$Coincidences = A \cdot \mathcal{N}(x; \mu, \sigma^2) + \text{Background}$
$A = 2.2706 \pm 0.0150$
$\mu = 0.1576 \pm 0.0000$
$\sigma = 0.0080 \pm 0.0001$
$FWHM = 0.0188 \pm 0.0001$
$\chi^2 = 14541.73$
DOF = 84
b) Closer to PMT 1
$Coincidences = A \cdot \mathcal{N}(x; \mu, \sigma^2) + \text{Background}$
$A = 4.4922 \pm 0.0147$
$\mu = 0.1696 \pm 0.0000$
$\sigma = 0.0080 \pm 0.0000$
$FWHM = 0.0188 \pm 0.0001$
$\chi^2 = 4438.51$
DOF = 84
c) Closer to PMT 2
$Coincidences = A \cdot \mathcal{N}(x; \mu, \sigma^2) + \text{Background}$
$A = 3.9140 \pm 0.0191$
$\mu = 0.1540 \pm 0.0000$
$\sigma = 0.0111 \pm 0.0001$
$FWHM = 0.0262 \pm 0.0001$
$\chi^2 = 6035.81$
DOF = 84
Coincidences
0
50
100
150
200
250
0.00
0.05
0.10
0.15
0.20
0.25
x (m)