

δx

☒

δy

☒

Damped Oscillator

$y = A_o e^{-bx} \sin(\omega x + \delta) + C$

$\chi^2_{\text{reduced}} = 1.01\text{e}+04$

Parameter	Value	Uncertainty
A_o [start: 7.16e-01]	2.765e+03	0
b	1.406e+03	0
ω [start: 4.67e+00]	-9.271e+02	0
δ [start: 9.33e+00]	2.785e+00	0
C	8.910e-03	4.212e-02

Jacobian not full rank, uncertainties may be zero

The figure consists of two vertically stacked plots sharing a common x-axis representing Time in seconds (s), ranging from 3 to 10.

The top plot displays the measured Angle in radians (y-axis, ranging from -0.6 to 0.6). The data points are represented by blue open squares. A solid grey horizontal line is drawn at y = 0, with a lighter grey shaded region around it representing the uncertainty band. The data points show a clear oscillatory pattern with a decaying amplitude over time.

The bottom plot displays the Residual (effective) values (y-axis, ranging from -100 to 100). The residuals are represented by black open squares. A dotted horizontal line is drawn at y = 0. The residuals show a clear oscillatory pattern, indicating that the model does not fully capture the underlying data, which is consistent with the high χ^2_{reduced} value.