Nanoscan M-Squared Automation

Yudong Sun

May 21, 2021

CONTENTS:

class fitter.Fitter(*x*, *y*, *xerror*, *yerror*, *func=<staticmethod object>*)

The Fitter class fits the given data using scipy.odr

Parameters

x [array_like of rank-1] Independent variable

y [array_like of rank-1] Dependent variable, should be of the same shape as x

xerror [array_like of rank-1] Error in x, should be of the same shape as x

yerror [array_like of rank-1] Error in y, should be of the same shape as y

func [function, optional] fcn(beta, x) –> y, by default *self.omega_z* (Guassian Beam Profile function)

Methods

load_data(x, y, xerror, yerror)	Load the data into a data object
omega_z(params, z)	Beam Radii Function to be fitted, according to https://docs.scipy.org/doc/scipy/reference/odr.html

load_data(*x*, *y*, *xerror*, *yerror*)

Load the data into a data object

Parameters

x [array_like of rank-1] Independent variable

y [array_like of rank-1] Dependent variable, should be of the same shape as x

xerror [array_like of rank-1] Error in x, should be of the same shape as x

yerror [array_like of rank-1] Error in y, should be of the same shape as y

static omega_z(*params*, *z*)

Beam Radii Function to be fitted, according to https://docs.scipy.org/doc/scipy/reference/odr.html

Parameters

params [array_like of rank-1] rank-1 array of length 4 where `beta = array([w_0, z_0, M_sq, lmbda])`

z [array_like of rank-1] rank-1 array of positions along an axis

Returns

y [array_like of rank-1] Calculated beam-radii of a single axis based on given parameters

CHAPTER

ONE

INDICES AND TABLES

- genindex
- modindex
- search

PYTHON MODULE INDEX

f

INDEX