

Errors and Residuals

Contents

Introduction	1
Errors	1
Residuals	1

Introduction

In statistics and optimization, errors and residuals are two closely related measures of the deviation of an observed value of an element of a statistical sample from its “theoretical value”.

Errors

The error (or disturbance) of an observed value is the deviation of the observed value from the (unobservable) true value of a quantity of interest (e.g. a population mean).

Residuals

The residual of an observed value is the difference between the observed value and the estimated value of the quantity of interest (e.g. a sample mean).