Mean Square Deviation = MSD

@wikipedia

Synonym: Mean Square Deviation (MSD) = Mean Square Error (MSE)

Statistical metric characterizing the model prediction quality (goodness of fit) between the datasets of a given variable x and its estimator $\hat{x}$:

$$MSD(x, \hat{x}) = \frac{1}{n} \sum_{i=1}^{n} (x_i - \hat{x}_i)^2$$

where

x	a variable represented by data set
$\hat{x}$	estimator of variable x
$\{x_1, x_2, x_3, \ldots x_N\}$	discrete set of numerical samples of variable x
$\{\hat{x}_1, \hat{x}_2, \hat{x}_3, \ldots \hat{x}_N\}$	discrete set of predictors for the corresponding samples of variable x

The MSD is a positive number, making zero for a constant dataset only.

The upper value of MSD is not limited and defined by the variable and its predictor, which can be troublesome in computations.

There are many normalized measures of prediction quality which are more comfortable for computations, with Coefficient of determination (R2) being the most popular.

The terms MSD and MSE are used in mathematics and engineering interchangeably.

See also

Human / Science / Formal Science / Mathematics / Statistics / Statistical Metric

[Root Mean Square Error (RMSE)] [Coefficient of determination (R2)]