Description

Predict Y from X and b

Usage

fit_rcpp(X, b)
robustRegBS

Arguments

X       Design matrix
b       Estimates of beta

Examples

## not run:
fit_rcpp(X,b)

## End(Not run)

robustRegBS  Robust Regression Function using Bisquare Psi Function

Description

Using iteratively reweighted least squares (IRLS), the function calculates the optimal weights to perform m-estimator or bounded influence regression. Returns robust beta estimates and prints robust ANOVA table.

Usage

robustRegBS(formula,data,tune=4.685,m=TRUE,max.it=1000,tol=1e-6,anova.table=FALSE)

Arguments

formula  Model
data      A data frame or matrix of data
tune     Tuning Constant. Default value of 4.685 is 95% asymptotically efficient against outliers
m        If TRUE, calculates m estimates of beta. If FALSE, calculates bounded influence estimates of beta
max.it   Maximum number of iterations to achieve convergence in IRLS algorithm
tol      Tolerance level in determining convergence
anova.table  If TRUE, prints robust ANOVA table

Details

M-estimates of beta should be used when evaluating least squares estimates of beta and diagnostics show outliers. Least squares estimates of beta should be used as starting points to achieve convergence.

Bounded influence estimates of beta should be used when evaluating least squares estimates of beta and diagnostics show large values of the "Hat Matrix" diagonals and outliers.
Note

Original package written in 2006

Author(s)

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References

Tukey,
Birch, Robust F-Test, 1983

See Also

robustRegH()

Examples

data(stackloss)
robustRegBS(stack.loss~Air.Flow+Water.Temp,data=stackloss)

#If X matrix contained large values of H matrix (high influence points)
robustRegBS(stack.loss~Air.Flow+Water.Temp,data=stackloss,m=FALSE)

robustRegH

Robust Regression Function using Huber Psi Function

Description

Using iteratively reweighted least squares (IRLS), the function calculates the optimal weights to
perform m-estimator or bounded influence regression. Returns robust beta estimates and prints
robust ANOVA table

Usage

robustRegH(formula,data,tune=1.345,m=TRUE,max.it=1000,tol=1e-6,anova.table=FALSE)

Arguments

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<th>Argument</th>
<th>Description</th>
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<tbody>
<tr>
<td>formula</td>
<td>Model</td>
</tr>
<tr>
<td>data</td>
<td>A data frame or matrix of data</td>
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<tr>
<td>tune</td>
<td>Tuning Constant. Default value of 1.345 is 95% asymptotically efficient against outliers</td>
</tr>
<tr>
<td>m</td>
<td>If TRUE, calculates m estimates of beta. If FALSE, calculates bounded influence estimates of beta</td>
</tr>
<tr>
<td>max.it</td>
<td>Maximum number of iterations to achieve convergence in IRLS algorithm</td>
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<td>tol</td>
<td>Tolerance level in determining convergence</td>
</tr>
<tr>
<td>anova.table</td>
<td>If TRUE, prints robust ANOVA table</td>
</tr>
</tbody>
</table>
Details

M-estimates of beta should be used when evaluating least squares estimates of beta and diagnostics show outliers. Least squares estimates of beta should be used as starting points to achieve convergence.

Bounded influence estimates of beta should be used when evaluating least squares estimates of beta and diagnostics show large values of the "Hat Matrix" diagonals and outliers.

Note

Original package written in 2006

Author(s)

Ian M. Johnson <ian@alpha-analysis.com>

References

Huber,
Birch, Robust F-Test, 1983

See Also

robustRegBS()

Examples

data(stackloss)
robustRegH(stack.loss~Air.Flow+Water.Temp,data=stackloss)

#If X matrix contained large values of H matrix (high influence points)
robustRegH(stack.loss~Air.Flow+Water.Temp,data=stackloss,m=FALSE)
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