

Package ‘LePage’

October 1, 2025

Type Package

Title LePage Type Tests

Version 1.0

Date 2025-09-25

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Depends R (>= 4.0)

Imports Rfast, stats

Suggests Rfast2

Description Location and scale hypothesis testing using the LePage test and variants of its as proposed by Hussain A. and Tsagris M. (2025), <[doi:10.48550/arXiv.2509.19126](https://doi.org/10.48550/arXiv.2509.19126)>.

License GPL (>= 2)

NeedsCompilation no

Repository CRAN

Date/Publication 2025-10-01 07:30:09 UTC

Contents

LePage-package	2
col.lepage	2
lepage	4
Index	5

LePage-package	<i>LePage type tests</i>
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Description

LePage type tests

Details

Package:	LePage
Type:	Package
Version:	1.0
Date:	2025-09-25
License:	GPL-2

Maintainers

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Author(s)

Abid Hussain <abid0100@gmail.com> and Michail Tsagris <mtsagris@uoc.gr>.

References

Hussain A. and Tsagris M. (2025). Modified Lepage-type test statistics for the weak null hypothesis.
<https://arxiv.org/pdf/2509.19126>

col.lepage	<i>Column-wise LePage type tests</i>
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Description

Column-wise LePage type tests

Usage

col.lepage(x, y)

Arguments

x	A numerical matrix with data, where each column corresponds to the first sample.
y	A numerical matrix with data, where each column corresponds to the second sample.

Details

The classical LePage and 5 variants of it are performed, as proposed by Hussain and Tsagris (2025). The test is performed for each pair of columns of the x and y matrices, between the i-th column of x and y.

Value

A list including:

statistic	A matrix with 6 columns, where each column contains each test statistic and each row refers to the pair of groups.
pvalue	A matrix with 6 columns, where each column contains each p-value and each row refers to the pair of groups.

Author(s)

Abid Hussain and Michail Tsagris.

R implementation and documentation: Abid Hussain <abid0100@gmail.com> and Michail Tsagris <mtsagris@uoc.gr>.

References

Hussain A. and Tsagris M. (2025). Modified Lepage-type test statistics for the weak null hypothesis. <https://arxiv.org/pdf/2509.19126>

See Also

[lepage](#)

Examples

```
x <- matrix( rnorm(30 * 5), ncol = 5 )
y <- matrix( rnorm(31 * 5), ncol = 5 )
col.lepage(x, y)
```

lepage	<i>LePage type tests</i>
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Description

LePage type tests

Usage

```
lepage(x, y)
```

Arguments

x	A numerical vector with data of the first sample.
y	A numerical vector with data of the second sample.

Details

The classical LePage and 5 variants of it are performed, as proposed by Hussain and Tsagris (2025).

Value

A matrix with 6 columns and two rows. The first row refers to the 6 test statistics and the second row to their corresponding p-values.

Author(s)

Abid Hussain and Michail Tsagris.

R implementation and documentation: Abid Hussain <abid0100@gmail.com> and Michail Tsagris <mtsagris@uoc.gr>.

References

Hussain A. and Tsagris M. (2025). Modified Lepage-type test statistics for the weak null hypothesis. <https://arxiv.org/pdf/2509.19126>

See Also

[col.lepage](#)

Examples

```
x <- rnorm(30)
y <- rnorm(40)
lepage(x, y)
```

Index

col.lepage, [2](#), [4](#)

lepage, [3](#), [4](#)

LePage-package, [2](#)