

Package ‘AutoWeatherIndices’

October 12, 2022

Type Package

Title Calculating Weather Indices

Version 0.1.0

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Description Weather indices are formed from weather variables in this package. The users can input any number of weather variables recorded over any number of weeks. This package has no restriction on the number of weeks and weather variables to be taken as input. The details of the method can be seen (i)'Joint effects of weather variables on rice yields' by R. Agrawal, R. C. Jain and M. P. Jha in Mausam, vol. 34, pp. 189-194, 1983, <doi:10.54302/mausam.v34i2.2392>, (ii)'Improved weather indices based Bayesian regression model for forecasting crop yield' by M. Yeasin, K. N. Singh, A. Lama and B. Gurung in Mausam, vol. 72, pp.879-886, 2021, <doi:10.54302/mausam.v72i4.670>.

License GPL-3

Encoding UTF-8

Imports Hmisc,gtools

NeedsCompilation no

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Repository CRAN

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Description

Weather indices are computed from weather variables. The users can input any number of weather variables recorded over any number of weeks. This package has no restriction on the number of weeks and weather variables to be taken as input. The details of the method can be seen (i) 'Joint effects of weather variables on rice yields' by R. Agrawal, R. C. Jain and M. P. Jha in *Mausam*, vol. 34, pp. 189-194, 1983, <doi:10.54302/mausam.v34i2.239>, (ii) 'Improved weather indices based Bayesian regression model for forecasting crop yield' by M. Yeasin, K. N. Singh, A. Lama and B. Gurung in *Mausam*, vol. 72, pp.879-886, 2021, <doi:10.54302/mausam.v72i4.670>.

Usage

```
AutoWeatherIndices(x, nw)
```

Arguments

x	Matrix of weather variables recorded weekly, along with the response variable (eg. Yiled) recorded over years in the first column.
nw	Number of weeks for which data has been recorded.

Value

return_list	The matrix of weather indices along with two correlation matrices between the weather variables and the response variable.
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Author(s)

Achal Lama, Kamlesh N Singh and Bishal Gurung

References

Agrawal, R. Jain, R.C. and Jha, M.P.(1983). Joint effects of weather variables on rice yields. *Mausam*,34(2):189-194. (doi:10.54302/mausam.v34i2.239).

Yeasin, Md. Singh, K.N. Lama, A. and Gurung, B. (2021). Improved weather indices based Bayesian regression model for forecasting crop yield. *Mausam*, 72(4):879-886. (doi:10.54302/mausam.v72i4.670).

Examples

```
x=matrix(c(2011, 31.66, 33.23, 32.94, 32.91, 33.37, 30.59, 25.51, 26.30, 26.44,
26.19, 28.10, 26.34, 21.64, 22.14, 23.23, 1978, 32.83, 32.69, 30.10, 30.71, 29.79, 28.87,
28.81, 27.69, 25.01, 26.34, 26.31, 25.31, 26.53, 27.59, 22.31)
, nrow=2, ncol=16, byrow=TRUE)
AutoWeatherIndices(x, 5)
```

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