Package 'CARBayesdata'

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Type Package

Title Data Used in the Vignettes Accompanying the CARBayes and
CARBayesST Packages

Version 3.0

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Description Spatio-temporal data from Scotland used in the vignettes accompanying the CAR-
Bayes (spatial modelling) and CARBayesST (spatio-temporal modelling) pack-
ages. Most of the data relate to the set of 271 Intermedi-
ate Zones (IZ) that make up the 2001 definition of the Greater Glasgow and Clyde health board.

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Imports sf

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CARBayesdata-package	*Data Used in the Vignettes Accompanying the CARBayes and CAR-BayesST Packages*

Description

Spatio-temporal data from Scotland used in the vignettes accompanying the CARBayes (spatial modelling) and CARBayesST (spatio-temporal modelling) packages. Most of the data relate to the set of 271 Intermediate Zones (IZ) that make up the 2001 definition of the Greater Glasgow and Clyde health board.

Details

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Type:	Package
Version:	3.0
Date:	2022-05-11
License:	GPL (>= 2)

Author(s)

Maintainer: Duncan Lee <Duncan.Lee@glasgow.ac.uk>

Examples

```
library(sf)

## Read in the spatial data for the Greater Glasgow and Clyde Health Board
data(GGHB.IZ)

## Read in the respiratory hospitalisation and pollution data
data(pollutionhealthdata)

## Read in the property price data
data(pricedata)

## Read in the respiratory hospitalisation data
data(respiratorydata)

## Read in the property sales data
data(salesdata)
```

GGHB.IZ	*Spatial polygon information for the Greater Glasgow and Clyde health board*

Description

A Simple Features (sf) object containing the spatial polygon information for the set of 271 Intermediate Zones (IZ), that make up the 2001 definition of the Greater Glasgow and Clyde health board in Scotland. This study region is used in the worked examples in the vignettes accompanying the CARBayes and CARBayesST packages.

Usage

```
data(GGHB.IZ)
```

Format

A Simple Features (sf) object, which contains 271 observations on the following variables.

IZ Unique code for each IZ.

name Name of each IZ.

geometry The polygons representing each IZ.

easting Easting coordinate of the centroid in metres.

northing Northing coordinate of the centroid in metres.

Source

These data were provided by the Scottish Government via http://data.gov.uk.

Examples

```
library(sf)
data(GGHB.IZ)
```

---

lipdata	*Lip cancer data for Scotland*

Description

These purely spatial data summarise overall lip cancer cases and possible covariate risk factors for the period 1975 to 1986, for 56 districts in Scotland. These data are used by the saeHB package.

Usage

```
data(lipdata)
```

Format

A data.frame object containing 56 observations on the following 5 variables.

observed The number of recorded lip cancer cases.

expected The expected number of lip cancer cases computed using indirect standardisation using Scotland-wide disease rates.

pcaff The percetage of the workforce employed in agriculture, fishing and forestry.

latitude The latitude of the centroid.

longitude The longitude of the centroid.

Examples

```
data(lipdata)
```

---

pollutionhealthdata	*Respiratory hospitalisation, air pollution and covariate data for the Greater Glasgow and Clyde health board between 2007 and 2011.*

Description

A data.frame object containing spatio-temporal data on respiratory hospitalisations, air pollution concentrations and socio-economic deprivation covariates for the 271 Intermediate Zones (IZ) that make up the Greater Glasgow and Clyde health board in Scotland. Yearly data are available between 2007 and 2011 inclusive. These data are used in a worked example in the vignette accompanying the CARBayesST package.

Usage

```
data(pollutionhealthdata)
```

Format

A data.frame object containing 1355 observations on the following 7 variables.

IZ The unique identifier for each IZ.

year The year the data relate to.

observed The observed numbers of hospitalisations due to respiratory disease.

expected The expected numbers of hospitalisations due to respiratory disease computed using indirect standardisation from Scotland-wide respiratory hospitalisation rates.

pm10 Average particulate matter (less than 10 microns) concentrations.

jsa The percentage of working age people who are in receipt of Job Seekers Allowance, a benefit paid to unemployed people looking for work.

price Average property price (divided by 100,000).

Source

These data were provided by the Scottish Government via http://statistics.gov.scot.

Examples

```
data(pollutionhealthdata)
```

---

pricedata *Property price data for the Greater Glasgow and Clyde health board*

Description

A data.frame object containing purely spatial data on median property prices in 2008 and possible covariates for 270 of the 271 Intermediate Zones (IZ) that make up the Greater Glasgow and Clyde health board in Scotland. Data for one IZ have been removed due to it having an extreme outlying observation. These data are used in a worked example in the vignette accompanying the CARBayes package.

Usage

```
data(pricedata)
```

Format

A data.frame object containing 270 observations on the following 7 variables.

IZ The unique identifier for each IZ.

price Median property price.

crime The crime rate (number of crimes per 10,000 people).

rooms The median number of rooms in a property.

sales The percentage of properties that sold in a year.

driveshop The average time taken to drive to a shopping centre in minutes.

type The predominant property type with levels: detached, flat, semi, terrace.

Source

These data were provided by the Scottish Government via http://statistics.gov.scot.

Examples

```
data(pricedata)
```

---

respiratorydata   *Respiratory hospitalisation data for the Greater Glasgow and Clyde health board*

Description

A data.frame object containing purely spatial data on hospital admisssions due to respiratory disease in 2010 for the 134 Intermediate Zones (IZ) to the north of the river Clyde in the Greater Glasgow and Clyde health board. These data are used in a worked example in the vignette accompanying the CARBayes package.

Usage

```
data(respiratorydata)
```

Format

A data.frame object containing 134 observations on the following 5 variables.

IZ The unique identifier for each IZ.

observed The observed numbers of hospitalisations due to respiratory disease.

expected The expected numbers of hospitalisations due to respiratory disease computed using indirect standardisation from Scotland-wide respiratory hospitalisation rates.

incomedep The percentage of people who are defined to be income deprived.

SMR The standardised morbidity ratio (SMR = observed / expected) for respiratory hospitalisation.

Source

These data were provided by the Scottish Government via http://statistics.gov.scot.

Examples

```
data(respiratorydata)
```

---

salesdata   *Property sales data for the Greater Glasgow and Clyde health board between 2003 and 2013.*

Description

A data.frame object containing spatio-temporal data on property sales and the total number of properties for the 271 Intermediate Zones (IZ) that make up the Greater Glasgow and Clyde health board in Scotland. Yearly data are available between 2003 and 2013 inclusive. These data are used in a worked example in the vignette accompanying the CARBayesST package.

Usage

```
data(salesdata)
```

Format

A data.frame object containing 2981 observations on the following 4 variables.

IZ The unique identifier for each IZ.

year The year the data relate to.

sales The number of property sales.

stock The number of properties.

Source

These data were provided by the Scottish Government via http://statistics.gov.scot.

Examples

```
data(salesdata)
```

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