

# Package ‘RCAMx’

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**Type** Package  
**Title** RCAMx: Loading Tools for CAMx Files  
**Version** 0.1  
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**Description** Package of functions to load CAMx files into R data frames. Requires unix and port-land group compilers pgf90 and pgcc.  
**License** GPL-2  
**Depends** dplyr, tidyr

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LL2UTM	<i>Convert Lat/Lon to UTM coordinates</i>
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### Description

Reads arrays of Lat/Lon and returns arrays of model UTM coordinates.

### Usage

```
LL2UTM(Lat, Lon,  
        clat = 40., clon = -97., tlat1 = 33. , tlat2 = 45.)
```

**Arguments**

Lat	Real array of latitudes.
Lon	Real array of longitudes.
clat	Central latitude of projection.
clon	Central longitude of projection.
tlat1	First true latitude of projection.
tlat2	Second true latitude of projection.

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READ_CAMx_2DAVG	<i>Reads CAMx 2D Average Concentration File</i>
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**Description**

Reads CAMx 2D average concentration file and returns a R data frame.

**Usage**

```
READ_CAMx_2DAVG(input, timezone="GMT",
  strp = TRUE, addutm = FALSE)
```

**Arguments**

input	Input data file of CAMx 2D or 3D average concentration file in UAM format. 3D files will only have the ground layer extracted.
timezone	Timezone of input data file.
strp	Optional flag to include boundary cell data.
addutm	Optional flag to include model utm coordinates in output data frame.

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READ_CAMx_2DEMIS	<i>Reads CAMx Area Source Emmissions File</i>
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**Description**

Reads CAMx area source emissions file and returns a R data frame.

**Usage**

```
READ_CAMx_2DEMIS(input, temp="TEMPXX25V367X1.dat", timezone="GMT",
  strp = TRUE, addutm = FALSE)
```

**Arguments**

input	Input data file of CAMx area sources in UAM format.
temp	Temporary file used to store species names.
timezone	Timezone of input data file.
strp	Optional flag to include boundary cell data.
addutm	Optional flag to include model utm coordinates in output data frame.

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READ_CAMx_2DMET	<i>Reads CAMx 2D Met File</i>
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**Description**

Reads CAMx 2D met file and returns a R data frame.

**Usage**

```
READ_CAMx_2DMET(input, timezone="GMT",  
  strp = TRUE, addutm = FALSE)
```

**Arguments**

input	Input data file of CAMx 2D met in UAM format.
timezone	Timezone of input data file.
strp	Optional flag to include boundary cell data.
addutm	Optional flag to include model utm coordinates in output data frame.

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READ_CAMx_2DMET_STATIC	<i>Reads CAMx Static 2D Met File</i>
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**Description**

Reads CAMx static 2D met file and returns a R data frame.

**Usage**

```
READ_CAMx_2DMET_STATIC(input, timezone="GMT",  
  strp = TRUE, addutm = FALSE)
```

**Arguments**

input	Input data file of CAMx static 2D met in UAM format.
timezone	Timezone of input data file.
strp	Optional flag to include boundary cell data.
addutm	Optional flag to include model utm coordinates in output data frame.

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READ_CAMx_3DAVG	<i>Reads CAMx 3D Average Concentration File</i>
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### Description

Reads CAMx 3D average concentration file and returns a R data frame.

### Usage

```
READ_CAMx_3DAVG(inputAVG, inputMET, timezone="GMT",  
  strp = TRUE, addutm = FALSE)
```

### Arguments

inputAVG	Input data file of CAMx 3D average concentration file in UAM format.
inputMET	Input data file of CAMx 3D meteorology file in UAM format.
timezone	Timezone of input data file.
strp	Optional flag to include boundary cell data.
addutm	Optional flag to include model utm coordinates in output data frame.

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READ_CAMx_3DEMIS	<i>Reads CAMx Point Source Emissions File</i>
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### Description

Reads CAMx point source emissions file and returns a R data frame.

### Usage

```
READ_CAMx_3DEMIS(input, temp="TEMPXX25V367X1.dat", timezone="GMT",  
  addutm = FALSE)
```

### Arguments

input	Input data file of CAMx point sources in UAM format.
temp	Temporary file used to store species names.
timezone	Timezone of input data file.
addutm	Optional flag to include model utm coordinates in output data frame.

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READ_CAMx_3DMET	<i>Reads CAMx 3D Met File</i>
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**Description**

Reads CAMx 3D met file and returns a R data frame.

**Usage**

```
READ_CAMx_3DMET(input, timezone="GMT",  
  strp = TRUE, addutm = FALSE)
```

**Arguments**

input	Input data file of CAMx 3D met in UAM format.
timezone	Timezone of input data file.
strp	Optional flag to include boundary cell data.
addutm	Optional flag to include model utm coordinates in output data frame.

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UTM2LL	<i>Convert UTM coordinates to Lat/Lon</i>
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**Description**

Reads arrays of UTM coordinates and returns arrays of Latitude and longitude.

**Usage**

```
UTM2LL(UTMx, UTMx,  
  clat = 40., clon = -97., tlat1 = 33. , tlat2 = 45.)
```

**Arguments**

UTMx	Real array of UTM x-coordinates.
UTMy	Real array of UTM y-coordinates.
clat	Central latitude of projection.
clon	Central longitude of projection.
tlat1	First true latitude of projection.
tlat2	Second true latitude of projection.

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