# Package 'spm'

November 29, 2019

Title SPM extract package
Version 1.1
<b>Date</b> 2019-11-13
Author A. Dunn
<b>Description</b> A set of R functions for extracting from SPM output files.
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## **R** topics documented:

spm-package
calc.abundance
extract
extract.ageingerror
extract.agesize
extract.ageweight
extract.covariance
extract.derivedquantity
extract.derivedquantitybycell
extract.estimatesummary
extract.estimatevalue
extract.initialisationphase
extract.layer
extract.layerderivedview
extract.MCMC
extract.objectivefunction
extract.observation
extract.partition
extract.partitionbiomass
extract.randomnumberseed
extract.selectivity
extract.simulations
extract.sizeweight
extract.spatialmap

2 spm-package

enm-r	package SPM extract package	
Index		22
	spm.zeroFun	21
	spm.unpaste	21
	spm.string.to.vector.of.words	21
	spm.string.to.vector.of.numbers	20
	spm.report.types	20
	spm.remove.last.words	20
	spm.remove.first.words	19
	spm.recodevector	19
	spm.pos.match	19
	spm.pos	18
	spm.make.table	18
	spm.make.list	18
	spm.make.filename	17
	spm.isin	17
	spm.is.whole.number	17
	spm.get.lines	16
	spm.extract.simulated.observation	16
	spm.dplot	16
	spm.convert.to.lines	15
	spm.area	15
	PFthreshold	15
	PFnormal	14
	PFlogistic	14
	PFinverselogistic	13
	PFexponential	13
	PFdoublenormal	12
	PFconstant	12
	PF	-11

### Description

A set of R functions for extracting and processing SPM output.

#### **Details**

Package: spm Date: 2013-02-12

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Index:

calc.abundance 3

spm-package SPM package

#### Author(s)

A. Dunn

Maintainer: A Dunn <a.dunn@niwa.co.nz>

calc.abundance

 $Generate\ a\ multivariate\ uniform\ distribution\ based\ on\ the\ bounds\ for$ 

the extimated parameters

#### **Description**

Generate a multivariate uniform distribution based on the bounds for the extimated parameters

#### Usage

```
calc.abundance(data, categories = NULL, ages = NULL, total = T)
```

#### Arguments

data data representing a partition categories

Optional subset of categories

Optional subset of ages

total If true, then sum over selected categories and ages. Default = TRUE

#### Author(s)

Alistair Dunn

extract

Extract SPM output into R

#### **Description**

Extract SPM output into R

### Usage

```
extract(file, path = "", ignore.unknown = FALSE)
```

#### **Arguments**

file the name of the input file containing model output to extract

path Optionally, the path to the file

ignore.unknown Ignore unknown objects in the output file

#### Author(s)

4 extract.ageweight

extract.ageingerror Utility extract function

### Description

Utility extract function

#### Usage

```
extract.ageingerror(lines)
```

### Author(s)

Alistair Dunn

extract.agesize

Utility extract function

### Description

Utility extract function

### Usage

```
extract.agesize(lines)
```

### Author(s)

Alistair Dunn

 ${\tt extract.ageweight}$ 

Utility extract function

### Description

Utility extract function

#### Usage

```
extract.ageweight(lines)
```

#### Author(s)

extract.covariance 5

extract.covariance

Utility extract function

#### Description

Utility extract function

#### Usage

```
extract.covariance(lines)
```

#### Author(s)

Alistair Dunn

 ${\tt extract.derived} {\tt quantity}$ 

Utility extract function

### Description

Utility extract function

### Usage

```
extract.derivedquantity(lines)
```

### Author(s)

Alistair Dunn

 ${\tt extract.derived} quantity by {\tt cell}$ 

Utility extract function

### Description

Utility extract function

### Usage

```
extract.derivedquantitybycell(lines)
```

#### Author(s)

```
extract.estimatesummary
```

Utility extract function

#### Description

Utility extract function

### Usage

extract.estimatesummary(lines)

#### Author(s)

Alistair Dunn

extract.estimatevalue Utility extract function

### Description

Utility extract function

### Usage

extract.estimatevalue(lines)

### Author(s)

Alistair Dunn

 ${\tt extract.initialisation phase}$ 

Utility extract function

### Description

Utility extract function

### Usage

extract.initialisationphase(lines)

#### **Arguments**

lines

a file of scanned lines

### Author(s)

extract.layer 7

extract.layer

Utility extract function

### Description

Utility extract function

#### Usage

```
extract.layer(lines)
```

#### Author(s)

Alistair Dunn

extract.layerderivedview

Utility extract function

### Description

Utility extract function

### Usage

```
extract.layerderivedview(lines)
```

### Author(s)

Alistair Dunn

extract.MCMC

Utility extract function

### Description

Utility extract function

### Usage

```
extract.MCMC(lines)
```

#### Author(s)

8 extract.partition

```
{\tt extract.objective function}
```

Utility extract function

#### Description

Utility extract function

### Usage

```
\verb|extract.objectivefunction(lines)|\\
```

#### Author(s)

Alistair Dunn

extract.observation

Utility extract function

### Description

Utility extract function

### Usage

```
extract.observation(lines)
```

### Author(s)

Alistair Dunn

extract.partition

Utility extract function

### Description

Utility extract function

### Usage

```
extract.partition(lines)
```

#### Author(s)

extract.partitionbiomass 9

```
extract.partitionbiomass
```

Utility extract function

### Description

Utility extract function

### Usage

```
extract.partitionbiomass(lines)
```

#### Author(s)

Alistair Dunn

extract.randomnumberseed

Utility extract function

### Description

Utility extract function

#### Usage

```
extract.randomnumberseed(lines)
```

#### Author(s)

Alistair Dunn

extract.selectivity

Utility extract function

### Description

Utility extract function

### Usage

```
extract.selectivity(lines)
```

#### Author(s)

10 extract.spatialmap

extract.simulations

Utility extract function

### Description

Utility extract function

#### Usage

```
extract.simulations(file, path = "")
```

### Author(s)

Alistair Dunn

extract.sizeweight

Utility extract function

### Description

Utility extract function

### Usage

```
extract.sizeweight(lines)
```

### Author(s)

Alistair Dunn

extract.spatialmap

Utility extract function

### Description

Utility extract function

#### Usage

```
extract.spatialmap(lines)
```

#### Author(s)

generate.MVU 11

generate.MVU	Generate a multivariate uniform distribution based on the bounds for the extimated parameters

### Description

Generate a multivariate uniform distribution based on the bounds for the extimated parameters

### Usage

```
generate.MVU(file, path = "", output.file, sample.size = 1)
```

#### **Arguments**

file the name of the input file containing the estimated fits

path Optionally, the path to the file

output.file The name of the output file to write randomly generated values

sample.size The number f samples to generate

#### Author(s)

Sophie Mormede

PF Evaluate a preference function

### Description

Evaluate a preference function

### Usage

```
PF(type = "none", x, alpha, ..., rescale = T)
```

### Arguments

type 1	4	type of	pre	terence	tunct	ion. '	Valid	valu	ies inc	lude	cons	tant"	, "	doublenormal'	,

"exponential", "inverselogistic", "logistic", "normal", and "threshold"

x x-values over which to evaluate. Default = 1
 alpha The value of the alpha parameter. Default = 1
 the parameters of the preference functions

rescale Rescale the function to have value 1. Default = TRUE

#### Author(s)

12 PFdoublenormal

#### **Description**

Evaluate the constant preference function

#### Usage

```
PFconstant(x, alpha, rescale = T)
```

#### Arguments

x x-values over which to evaluate. Default = 1 alpha The value of the alpha parameter. Default = 1

rescale Rescale the function to have value 1?. Default = TRUE

#### Author(s)

Alistair Dunn

PFdoublenormal	Evaluate the double normal	preference function

#### Description

Evaluate the double normal preference function

### Usage

```
PFdoublenormal(x, alpha, mu, sigmaL, sigmaR, rescale = T)
```

### Arguments

X	x-values over which to evaluate. Default = $1$
alpha	The value of the alpha parameter. Default = $1$

mu the mean of the double normal

sigmaL the standard deviation of the left-hand side of the double normal sigmaR the standard deviation of the right-hand side of the double normal

rescale Rescale the function to have value 1?. Default = TRUE

#### Author(s)

PFexponential 13

PFexponential	Evaluate the exponential	preference function

#### **Description**

Evaluate the exponential preference function

#### Usage

```
PFexponential(x, alpha, lambda, rescale = T)
```

### Arguments

x x-values over which to evaluate. Default = 1 alpha The value of the alpha parameter. Default = 1

lambda the rate of the exponential

rescale Rescale the function to have value 1?. Default = TRUE

#### Author(s)

Alistair Dunn

PFinverselogistic Evaluate the inverse-logistic preference function

#### Description

Evaluate the inverse-logistic preference function

### Usage

```
PFinverselogistic(x, alpha, a50, ato95, rescale = T)
```

#### **Arguments**

Х	x-values over which to evaluate. Default = $1$
alpha	The value of the alpha parameter. Default = $1$

a50 the a50 value of the inverse logisitic ato95 the ato95 value of the inverse logisitic

rescale Rescale the function to have value 1?. Default = TRUE

#### Author(s)

14 PFnormal

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PΕ	log	71 9	<b>†</b> 1	$\mathcal{C}$
	+ U.S	, + -	<b>C T</b>	

Evaluate the logistic preference function

#### **Description**

Evaluate the logistic preference function

#### Usage

```
PFlogistic(x, alpha, a50, ato95, rescale = T)
```

### Arguments

X	x-values over which to evaluate. Default = $1$
alpha	The value of the alpha parameter. Default = 1

a50 the a50 value of the logisitic ato95 the ato95 value of the logisitic

rescale Rescale the function to have value 1?. Default = TRUE

### Author(s)

Alistair Dunn

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Evaluate the normal preference function

#### **Description**

Evaluate the normal preference function

#### Usage

```
PFnormal(x, alpha, mu, sigma, rescale = T)
```

#### Arguments

X	x-values over which to evaluate. Default = $1$
alpha	The value of the alpha parameter. Default = $1$

mu the mean of the normal

sigma the standard deviation of the normal

rescale Rescale the function to have value 1?. Default = TRUE

#### Author(s)

PFthreshold 15

PFthreshold

Evaluate the threshold preference function

### Description

Evaluate the threshold preference function

#### Usage

```
PFthreshold(x, alpha, N, lambda, rescale = T)
```

#### Arguments

x x-values over which to evaluate. Default = 1 alpha The value of the alpha parameter. Default = 1

N the threshhold value

rescale Rescale the function to have value 1?. Default = TRUE

#### Author(s)

Alistair Dunn

spm.area

utility function

#### **Description**

utility function

#### Usage

```
spm.area(corners)
```

### Author(s)

Alistair Dunn

```
spm.convert.to.lines utility function
```

### Description

utility function

#### Usage

```
spm.convert.to.lines(filename)
```

#### Author(s)

spm.get.lines

spm.dplot

utility function

#### Description

utility function

#### Usage

```
spm.dplot(..., name = T, quantiles = c(0.5), plot.mean = F, main = "", xlab = "", ylab = "", ylim, srtx = 0, bw = "nrd0", adjust = 1/3, adj = 0, fill = F, gap = 0.2)
```

#### Author(s)

Alistair Dunn

#### **Description**

utility function

#### Usage

```
spm.extract.simulated.observation(lines)
```

### Author(s)

Alistair Dunn

spm.get.lines

utility function

#### Description

utility function

### Usage

```
spm.get.lines(lines, from = -1, to = -1, contains = "",
    starts.with = "", clip.to = "", clip.from = "",
    clip.to.match = "", clip.from.match = "", ...)
```

### Author(s)

spm.is.whole.number 17

```
spm.is.whole.number utility function
```

### Description

utility function

#### Usage

```
spm.is.whole.number(string)
```

### Author(s)

Alistair Dunn

spm.isin

utility function

### Description

utility function

### Usage

```
spm.isin(x, y)
```

### Author(s)

Alistair Dunn

 ${\tt spm.make.filename}$ 

 $utility\ function$ 

### Description

utility function

#### Usage

```
spm.make.filename(file, path = "")
```

### Author(s)

spm.pos

spm.make.list

utility function

### Description

utility function

#### Usage

```
spm.make.list(lines)
```

### Author(s)

Alistair Dunn

spm.make.table

utility function

### Description

utility function

### Usage

```
spm.make.table(lines)
```

### Author(s)

Alistair Dunn

spm.pos

utility function

### Description

utility function

#### Usage

```
spm.pos(vector, x)
```

### Author(s)

spm.pos.match

spm.pos.match

utility function

### Description

utility function

#### Usage

```
spm.pos.match(vector, regexp)
```

#### Author(s)

Alistair Dunn

spm.recodevector

utility function

### Description

utility function

### Usage

```
spm.recodevector(in.data, from.vals, to.vals)
```

### Author(s)

Alistair Dunn

```
spm.remove.first.words
```

utility function

### Description

utility function

### Usage

```
spm.remove.first.words(string, words = 1)
```

#### Author(s)

```
spm.remove.last.words utility function
```

### Description

utility function

#### Usage

```
spm.remove.last.words(string, words = 1)
```

#### Author(s)

Alistair Dunn

spm.report.types

utility function

### Description

utility function

### Usage

```
spm.report.types()
```

### Author(s)

Alistair Dunn

```
{\it spm.string.to.vector.of.numbers} \\ {\it utility function}
```

### Description

utility function

### Usage

```
spm.string.to.vector.of.numbers(string, sep = " ")
```

#### Author(s)

```
{\it spm.string.to.vector.of.words} \\ {\it utility function}
```

### Description

utility function

### Usage

```
spm.string.to.vector.of.words(string, sep = " ")
```

### Author(s)

Alistair Dunn

spm.unpaste

utility function

### Description

utility function

#### Usage

```
spm.unpaste(string, sep = " ")
```

#### Author(s)

Alistair Dunn

 ${\tt spm.zeroFun}$ 

utility function

### Description

utility function

### Usage

```
spm.zeroFun(x, delta = 1e-11)
```

### Author(s)

# **Index**

```
*Topic package
    spm-package, 2
calc.abundance, 3
extract, 3
extract.ageingerror, 4
extract.agesize, 4
extract.ageweight, 4
extract.covariance, 5
extract.derivedquantity, 5
extract.derivedquantitybycell, 5
extract.estimatesummary, 6
extract.estimatevalue, 6
extract.initialisationphase, 6
extract.layer, 7
extract.layerderivedview, 7
extract.MCMC, 7
extract.objectivefunction, 8
extract.observation, 8
extract.partition, 8
extract.partitionbiomass, 9
extract.randomnumberseed, 9
extract.selectivity, 9
extract.simulations, 10
extract.sizeweight, 10
extract.spatialmap, 10
generate.MVU, 11
PF, 11
PFconstant, 12
PFdoublenormal, 12
PFexponential, 13
PFinverselogistic, 13
PFlogistic, 14
PFnormal, 14
PFthreshold, 15
spm (spm-package), 2
spm-package, 2
spm.area, 15
spm.convert.to.lines, 15
spm.dplot, 16
spm.extract.simulated.observation, 16
```

```
spm.get.lines, 16
spm.is.whole.number, 17
spm.isin, 17
spm.make.filename, 17
spm.make.list, 18
spm.make.table, 18
spm.pos, 18
spm.pos.match, 19
spm.recodevector, 19
spm.remove.first.words, 19
spm.remove.last.words, 20
spm.report.types, 20
spm.string.to.vector.of.numbers, 20
spm.string.to.vector.of.words, 21
spm.unpaste, 21
spm.zeroFun, 21
```