

Package ‘xlum’

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Type Package

Title Read, Write, and Convert xlum Data

Version 0.1.0.9000-45

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Description Support for the xlum-file format for exchange and long-term preservation of luminescence data.

License GPL-3

Depends R (>= 4.1),
utils

Imports methods,
Luminescence (>= 0.9.19),
xml2 (>= 1.3.3)

Suggests spelling (>= 2.2),
testthat (>= 3.1.3)

Encoding UTF-8

Language en-GB

LazyData true

RoxygenNote 7.1.2

Collate 'convert_rlum2xlum.R'
'methods.R'
'read_xlum.R'
'utils.R'
'validate_xlum.R'
'write_xlum.R'
'xlum-package.R'

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xlum-package

Read, Write, and Convert xlum Data

Description

Support for the xlum-file format for exchange and long-term preservation of luminescence data.

Details

Support contact

- <https://github.com/R-Lum/xlum/discussions>

Bug reporting

- <https://github.com/R-Lum/xlum/issues>

Project source code repository

- <https://github.com/R-Lum/xlum>

Package maintainer

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convert_rlum2xlum

Convert RLum-class objects to the XLUM format

Description

Converts [Luminescence::RLum](#) objects to xlum format

Usage

```
convert_rlum2xlum(rlum, file = NULL)
```

Arguments

rlum	Luminescence::RLum.Data and Luminescence::RLum.Analysis or a list of it (required): input for the conversion
file	character (<i>optional</i>): file name for the export, if NULL (the default), an xml2::xml_document object is returned

Details

The function tries to make a best possible conversion of the [Luminescence::RLum](#) to the xlum format. [Luminescence::RLum.Results](#) objects are not supported.

Because of the nature the [Luminescence::RLum](#) structure, the nodes <xlum/>, <sample/> are set automatically because the [Luminescence::RLum](#) does not distinguish between different samples.

Value

Depending on the setting. If file == NULL an [xml2::xml_document](#) object is returned, if file is set the function attempts to write an *.xlum file‘.

Function version

0.1.0

How to cite

Kreutzer, S., 2022. convert_rlum2xlum(): Convert RLum-class objects to the XLUM format. Function version 0.1.0. In: Kreutzer, S., 2022. xlum: Read, Write, and Convert xlum Data. R package version 0.1.0.9000-45.

Author(s)

Sebastian Kreutzer, Geography & Earth Sciences, Aberystwyth University (United Kingdom)

See Also

[Luminescence::RLum.Data](#), [write_xlum](#)

Examples

```
data(ExampleData.RLum.Analysis,
  envir = environment(),
  package = "Luminescence")
convert_rlum2xlum(IRSAR.RF.Data)
```

read_xlum

Import xlum files

Description

Imports xlum files using [xml2::read_xml](#). Comes with a few convenience features, such as the transformation of string lists to numeric vectors where meaningful.

Usage

```
read_xlum(file, verify = TRUE, output = "xlum_list")
```

Arguments

file	character (required): path to file
verify	logical (<i>with default</i>): enable/disable format validation
output	character (<i>with default</i>): output object of the import, supported are "xml_document", "list", "xlum_list" (the default)

Details

Supported output options

"xlum_list" (default): imports XML-data and coerces them to list. Numeric values for level <curve> are transposed into [numeric](#) vectors for better handling

"list": imports XML-data and coerces it to a [list](#), no further treatment of data

"xml_document": unprocessed output from [xml2::read_xml](#)

Value

The output depends on the setting selected in output. It will be either an [xml2::xml_document](#), [list](#), or a [list](#) of class xlum_list.

Function version

0.1.0

How to cite

Kreutzer, S., 2022. read_xlum(): Import xlum files. Function version 0.1.0. In: Kreutzer, S., 2022. xlum: Read, Write, and Convert xlum Data. R package version 0.1.0.9000-45.

Author(s)

Sebastian Kreutzer, Geography & Earth Sciences, Aberystwyth University (United Kingdom)

See Also

[xml2::read_xml](#), [validate_xlum](#), [write_xlum](#)

Examples

```
file <- system.file("extdata/xlum_example.xlum", package="xlum")
read_xlum(file)
```

`validate_xlum`*Validate xlum format against an XSD reference schema*

Description

A convenience wrapper around `xml2::xml_validate` against the reference format description shipped with `xlum-package`

Usage

```
validate_xlum(file)
```

Arguments

`file` `xml2::xml_document` (**required**): object to test

Value

Results of the validation `logical` with attributes

How to cite

Kreutzer, S., 2022. `validate_xlum()`: Validate xlum format against an XSD reference schema. In: Kreutzer, S., 2022. `xlum`: Read, Write, and Convert xlum Data. R package version 0.1.0.9000-45.

Author(s)

Sebastian Kreutzer, Geography & Earth Sciences, Aberystwyth University

Examples

```
file <- system.file("extdata/xlum_prototype.xlum", package = "xlum")
validate_xlum(file)
```

`write_xlum`*Write xlum files*

Description

Create xlum files using `xml2::read_xml`

Usage

```
write_xlum(x, file, ...)
```

Arguments

`x` `xlum_list`, `list`, `xml2::xml_document` (**required**) : input object
`file` `character` (**required**): valid file path and file name with ending `.xlum` (will be add automatically if needed)
`...` further arguments to be passed to `xml2::write_xml`

Value

Creates an XML-file with ending *.xlum

Function version

0.1.0

How to cite

Kreutzer, S., 2022. write_xlum(): Write xlum files. Function version 0.1.0. In: Kreutzer, S., 2022. xlum: Read, Write, and Convert xlum Data. R package version 0.1.0.9000-45.

Author(s)

Sebastian Kreutzer, Geography & Earth Sciences, Aberystwyth University (united Kingdom)

See Also

[xml2::write_xml](#), [read_xlum](#)

Examples

```
file <- system.file("extdata/xlum_prototype.xlum", package="xlum")
out_file <- tempfile()

xlum_data <- read_xlum(file)
write_xlum(xlum_data, out_file)
```

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