stmglossaries package description

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2023-08-01

For larger documents, such as reports and thesis, it is nice to have LaTeX take care of things like a list of acronyms or symbols.

If you write multiple documents you maybe want to make sure that the acronyms and symbols you use throughout all your texts are consistent. And you maybe also want to have the chance to change a symbol at a single location instead of crawling through every equation that might be affected by a change in notation.

This package provides an expendable set of commonly used acronyms as well as symbols in structural mechanics. It is build upon the glossaries package.

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1. Example

This is a simple test. It uses an acronym auxiliary power unit (APU). You can use all the acronyms defined in Appendix A. The example also has an equation to test the symbols:

$$F = ma \tag{1}$$

It creates a nice little list of symbols

Scalars

Symbol	Name	Description
a	Acceleration	
m	Mass	
F	Force	

2. Requirements

`Perl` is required to use the `arara makeglossaries` rule. Either install `Perl` or include a path to a binary to the system `PATH` variable. E.g. a `Perl` binary is shipped with `Git` under `GITINSTALLPATH\usr\bin\`.

3. Contents

There are multiple packages included:

Table 1: Package description

Package	Description
`stmglossaries`	Wrapper around the definitions for `acronyms` and `symbols` with options to load both
`stmglossariesbase`	Loads the underlying base package
`stmglossariesacronyms`	Main package for acronyms
`stmglossariesacronymscommands`	Acronym utility and shortcut commands
`stmglossariesacronymsitems`	Acronym definitions
`stmglossariesacronymsstyles`	Styles for printing acronym lists
`stmglossariesglossary`	Main package for glossary
`stmglossariesglossarycommands`	Glossary utility and shortcut commands
`stmglossariesglossaryitems`	Glossary entry definitions
`stmglossariesglossarystyles`	Styles for printing glossary lists
`stmglossariessymbols`	Main package for symbols
`stmglossariessymbolscommands`	Utility commands for symbols
`stmglossariessymbolsitems`	Symbol definitions
`stmglossariessymbolsstyles`	Styles for printing symbol lists

3.1. Acronyms

`stmglossariesacronyms.sty` is the control package for acronyms. It can be used to control the acronym package modules.

`stmglossariesacronymsitems.sty` contains all acronym definitions. These can be used by the `\gls`-like commands of `glossaries`, see section 6.1 of the `glossaries` documentation.

`stmglossariesacronymsstyles.sty` contains implementations for the `style` option in a call to `\printglossary[type=\acronymtype,style=STYLENAME]`. See subsection 6.1 for details.

3.2. Glossary

`stmglossariesglossary.sty` is the control package for the glossary. It can be used to control the glossary package modules.

`stmglossariesglossaryitems.sty` contains all acronym definitions. These can be used by the `\gls`-like commands of `glossaries`, see section 6.1 of the `glossaries` documentation.

`stmglossariesglossarystyles.sty` contains implementations for the `style` option in a call to `\printglossary[type=main,style=STYLENAME]`. See subsection 6.2 for details.

3.3. Symbols

`stmglossariessymbols.sty` is the control package for symbols. It can be used to control the symbol package modules.

`stmglossariessymbolsitems.sty` contains all symbol definitions. These can be used by the `\glssymbol` command of `glossaries`, see section 6.2 of the `glossaries` documentation.

`stmglossariessymbolsstyles.sty` contains implementations for the `style` option in a call to `\printglossary[type=scalarlist,style=STYLENAME]`. See subsection 6.3 for details.

`stmglossariessymbolscommands.sty` contains utility commands to facilitate the use of symbols and operators.

4. Usage - in the preamble

There are different options to load acronyms, symbols or the whole thing. Additionally, the package offers some predefined styles to set your symbols in a nice way.

4.1. Base package

`stmglossariesbase` loads the underlying base package. It must not be loaded explicitly by the user. All other packages check if the package was already loaded with

```
\usepackage{stmglossariesbase}
```

In case you or another package have not loaded *stmglossariesbase* with own options beforehand, the package will load the underlying base package with the options `acronym`, `nomain` and `toc`.

4.1.1. Change titles

There are different possibilities to change the displayed title for the individual `\printglossary` calls. Especially in case the acronyms and glossary packages are used in combination, the from glossaries documentation, please use

```
\renewcommand*{\acronymname}{...}
\renewcommand*{\glossaryname}{...}%
\renewcommand*{\symbolname}{...}%
```

instead of changing the title locally with

```
\printglossary[...,title={...}]
```

as the latter does not affect the name in references.

4.2. Load the whole package - acronyms, glossary and symbols

This way, the acronyms, glossary as well as the symbol items are loaded. Load the package by adding

```
\usepackage{stmglossaries}
```

to your preamble.

4.2.1. Options

Option *acronyms* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the acronym definitions.

```
\usepackage[acronyms=true]{stmglossaries}
```

`acronyms=true` is the default and loads the acronyms. It is used in case `acronyms=false` is not set explicitly.

Option *symbols* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the symbol definitions.

```
\usepackage[symbols=true]{stmglossaries}
```

`symbols=true` is the default and loads the symbols. It is used in case `symbols=false` is not set explicitly.

Option *items* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the item definitions.

```
\usepackage[items=true]{stmglossaries}
```

`items=true` is the default and loads the styles. It is used in case `items=false` is not set explicitly.

Option *styles* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the style definitions.

```
\usepackage[styles=true]{stmglossaries}
```

`styles=true` is the default and loads the styles. It is used in case `styles=false` is not set explicitly.

Option *commands* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the additional command definitions.

```
\usepackage[commands=true]{stmglossaries}
```

`styles=true` is the default and loads the styles. It is used in case `styles=false` is not set explicitly.

Option *morewrites* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the morewrites package.

```
\usepackage[morewrites=true]{stmglossaries}
```

`morewrites=true` is the default. It is used in case `morewrites=false` is not set explicitly.

Option *makeglossaries* This is a boolean option. Expected values are either `true` or `false`. It controls whether to execute the `\makeglossaries` command at an appropriate location.

```
\usepackage[makeglossaries=true]{stmglossaries}
```

`makeglossaries=true` is the default. It is used in case `makeglossaries=false` is not set explicitly.

Option *autoaddglossaryentrytoacronym* This is a boolean option. Expected values are either `true` or `false`. It controls whether to invoke a call to the corresponding glossary entry in case an acronym is used.

```
\usepackage[autoaddglossaryentrytoacronym=false]{stmglossaries}
```

`autoaddglossaryentrytoacronym=false` is the default. It is used in case `autoaddglossaryentrytoacron` is not set explicitly.

Option *linkacronymtoglossary* This is a boolean option. Expected values are either `true` or `false`. It controls whether to add a link to the glossary entry in the list of acronyms.

```
\usepackage[linkacronymtoglossary=false]{stmglossaries}
```

`linkacronymtoglossary=false` is the default. It is used in case `linkacronymtoglossary=true` is not set explicitly.

4.3. Load the acronyms package

This way, the acronyms are loaded. Load the package individually by adding

```
\usepackage{stmglossariesacronyms}
```

to your preamble.

In case you load the package individually, you have to add `\makeglossaries` at a convenient location in your preamble.

4.3.1. Options

Option *items* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the item definitions from `stmglossariesacronymsitems`.

```
\usepackage[items=true]{stmglossariesacronyms}
```

`items=true` is the default. It is used in case `items=false` is not set explicitly.

Option *styles* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the style definitions from `stmglossariesacronymsstyles`.

```
\usepackage[styles=true]{stmglossariesacronyms}
```

`styles=true` is the default. It is used in case `styles=false` is not set explicitly.

4.4. Load the glossary package

This way, the acronyms are loaded. Load the package individually by adding

```
\usepackage{stmglossariesglossary}
```

to your preamble.

In case you load the package individually, you have to add `\makeglossaries` at a convenient location in your preamble.

4.4.1. Options

Option *items* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the item definitions from `stmglossariesglossaryitems`.

```
\usepackage[items=true]{stmglossariesglossary}
```

`items=true` is the default. It is used in case `items=false` is not set explicitly.

Option *styles* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the style definitions from `stmglossariesglossarystyles`.

```
\usepackage[styles=true]{stmglossariesglossary}
```

`styles=true` is the default. It is used in case `styles=false` is not set explicitly.

4.5. Load the symbols package

This way, the symbols are loaded. Load the package individually by adding

```
\usepackage{stmglossariessymbols}
```

to your preamble. In case you have not loaded *glossaries* with your own options beforehand, the package will load the package with the options `acronym`, `nomain` and `toc`.

In case you load the package individually, you have to add `\makeglossaries` at a convenient location in your preamble.

4.5.1. Options

Option *items* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the item definitions from `stmglossariessymbolsitems`.

```
\usepackage[items=true]{stmglossariessymbols}
```

`styles=true` is the default. It is used in case `styles=false` is not set explicitly.

Option *styles* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the style definitions from `stmglossariessymbolsstyles`.

```
\usepackage[styles=true]{stmglossariessymbols}
```

`styles=true` is the default. It is used in case `styles=false` is not set explicitly.

Option *commands* This is a boolean option. Expected values are either `true` or `false`. It controls whether to load the command definitions from `stmglossariessymbolscommands`.

```
\usepackage[commands=true]{stmglossariessymbols}
```

`styles=true` is the default. It is used in case `styles=false` is not set explicitly.

5. Usage - in the document

5.1. Acronyms

Print the list of acronyms with the style *stmacronymstyle* and without number using *nonumberlist* with

```
\printglossary[type=\acronymtype,style=stmacronymstyle,nonumberlist]
```

For a description of acronym styles, see subsection 6.1.
A shortcut command using the default style is available:

```
\printstmacronyms
```

For the latter to work, the package `stmglossariescommands` must be loaded, which is the default for the `stmglossaries` package.

5.2. Glossary

Print the glossary with the style *stmglossarystyle* and without number using *nonumberlist* with

```
\printglossary[type=main,style=stmglossarystyle,nonumberlist]
```

For a description of glossary styles, see subsection 6.2.
A shortcut command using the default style is available:

```
\printstmglossary
```

For the latter to work, the package `stmglossariescommands` must be loaded, which is the default for the `stmglossaries` package.

5.3. Symbols

5.3.1. Lists

`stmglossariessymbolitems` defines a number of lists for different types of symbols:

scalarlist	A list for scalar values
vectorlist	A list for vectors
matrixlist	A list for matrices
statelist	A list for peridynamic states
indexlist	A list for indices
exponentlist	A list for exponents
operatorlist	A list for mathematical operators

5.3.2. Combine lists

In case you want to combine the predefined lists and print a single combined list, e.g. for papers, use

```
\documentclass{...}

\usepackage{stmglossaries}

\newglossary[slg1]{symbollist}{syi1}{syg1}{Nomenclature}
\forallglsentries[scalarlist]{\lfoo}{\glsmoveentry{\lfoo}{symbollist}}
\forallglsentries[vectorlist]{\lfoo}{\glsmoveentry{\lfoo}{symbollist}}
\forallglsentries[matrixlist]{\lfoo}{\glsmoveentry{\lfoo}{symbollist}}
\forallglsentries[statelist]{\lfoo}{\glsmoveentry{\lfoo}{symbollist}}
\makeglossaries

\begin{document}

...

\printglossary[type=symbollist,style=YOURSTYLENAME,nonumberlist]

\end{document}
```

as described in section 16.1 of the `glossaries` documentation.

5.3.3. Commands

Styling There might be a time where you very locally want to define a symbol without adding it to the global list of symbol. Despite that, you want to make sure that the symbol, e.g. for a vector, a matrix or a state, uses the correct notation style.

Therefore, `stmglossariessymbolscommands` defines a couple of useful styling commands

\romanscalarsymbol	A roman scalar symbol
\greekscalarsymbol	A greek scalar symbol
\romanvectorsymbol	A roman vector symbol
\greekvectorsymbol	A greek vector symbol
\romanmatrixsymbol	A roman matrix symbol
\scalarstatesymbol	A greek matrix symbol
\romanvectorstatesymbol	A roman vector state symbol
\romandoublestatesymbol	A roman double state symbol

Utility `stmglossariessymbolscommands` defines a couple of useful utility commands to facilitate access to symbols and operators. These automatically add the operator symbol to the respective list.

`\csyslocal {a}`		$\hat{a}$
`\csysmaterial {a}`		$\bar{a}$
`\difference {a}`		Δa
`\mean {a}`		$\overline{a}$
`\norm {a}`	2-norm	$\|a\|$
`\transpose {a}`		a^T
`\inverse {a}`		a^{-1}
`\timederivativeshort {a}`		$\dot{a}$
`\timederivativeshorttwo {a}`		$\ddot{a}$
`\partialderivativeshort {a}{b}`		$a_{,b}$

Printing There are several shortcut commands available for printing the different glossary lists using the respective default style:

```
\printstmscalarglossary
\printstmvectorglossary
\printstmmatrixglossary
\printstmstateglossary
\printstmindexglossary
\printstmexponentglossary
\printstmoperatorglossary
```

In case you want the whole thing at once, use

```
\printallstmsymbols
```

6. Styles

6.1. Acronym styles

6.1.1. `stmacronymstyle`

Description This is a style for acronyms. It has one item column which is left aligned. The columns are *Abbreviation* and *Description*. Column headings are not printed.

6.2. Glossary styles

6.2.1. `stmglossarystyle`

Description This glossary style has two columns. The columns are *Entry* and *Description*. Both columns are left aligned.

6.2.2. `stmglossarysourcestyle`

Description This glossary style has three columns. The columns are *Entry*, *Description* and Sources. The first two columns are left aligned, the last column is centered.

In case you use this style, at least the following compile sequence is necessary:

```
pdflatex
makeglossaries
pdflatex
biber
pdflatex
pdflatex
```

6.2.3. `stmglossarylabelsourcestyle`

Description This glossary style has four columns. The columns are *Label*, *Entry*, *Description* and *Sources*. The first and third column are left aligned, the second and last column are centered.

In case you use this style, at least the following compile sequence is necessary:

```
pdflatex
makeglossaries
pdflatex
biber
pdflatex
pdflatex
```

6.2.4. `stmglossarylabelsourcestyle2`

Description This glossary style has three columns. The columns are *Label*, *Entry* and *Sources*. The first column is left aligned, the last two column is centered. The description is printed on a separate line over all columns.

In case you use this style, at least the following compile sequence is necessary:

```
pdflatex
makeglossaries
pdflatex
biber
pdflatex
pdflatex
```

6.3. Symbol styles

6.3.1. `stmsymbolstyle`

Description This is the basic style for variables. It has one item column which is left aligned. The columns are *Symbol*, *Name* and *Description*. Column headings are printed.

Example

Scalars

Symbol	Name	Description
a	Acceleration	
m	Mass	
F	Force	

6.0.1. `stmonecolpapersymbolstyle`

Description This is a style for variables for papers with one centered item column. The columns are *Symbol* and *Name*. Column headings are not printed.

Example

Scalars

a	Acceleration
m	Mass
F	Force

6.0.1. `stmtwocolpapersymbolstyle`

Description This is a style for variables for papers with two centered item column. The columns are *Symbol* and *Name*. Column headings are not printed.

Example

Scalars

a	Acceleration	F	Force
m	Mass		

6.0.1. `stmindexstyle`

Description This is a style for variable indices with one left align item column. The columns are *Symbol* and *Description*. Column headings are printed.

Example

$$\varepsilon_0 \tag{2}$$

Indices

Symbol Description

$(\ )_0$	Reference configuration

6.0.1. `stmexponentstyle`

Description This is a style for variable exponents with one left align item column. The columns are *Symbol* and *Description*. Column headings are printed.

Example

$$\varepsilon^e \tag{3}$$

Exponents

Symbol Description

$(\ )^e$	Elastic

6.0.1. `stmoperatorstyle`

Description This is a style for variable operators with one left align item column. The columns are *Symbol* and *Description*. Column headings are printed.

Example

$$\nabla \tag{4}$$

Operators

Symbol Description

$\nabla(\ )$	Fréchet derivative

References

[1] *Composite Aircraft Structure*. Standard FAA AC 20-107B. FAA, Aug. 2009. URL: https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC20-107B.pdf (visited on 09/22/2021).

[2] *Modelling & Simulation – CS-25 Structural Certification Specifications*. Standard EASA CM-S-014 Issue 01. EASA, July 2020. URL: https://www.easa.europa.eu/document-library/product-certification-consultations/proposed-certification-memorandum-modelling (visited on 09/17/2021).

[3] *Guide for Verification and Validation in Computational Solid Mechanics*. Standard ASME V&V 10-2006. ASME, 2006. URL: https://www.asme.org/codes-standards/find-codes-standards/v-v-10-standard-verification-validation-computational-solid-mechanics (visited on 09/17/2021).

[4] *Digital Twin: Definition & Value*. AIAA & AIA, Dec. 2020. URL: https://www.aiaa.org/docs/default-source/uploadedfiles/issues-and-advocacy/policy-papers/digital-twin-institute-position-paper-(december-2020).pdf (visited on 08/01/2023).

[5] M. Fowler. *Patterns of Enterprise Application Architecture: Pattern Enterpr Applica Arch*. Addison-Wesley Signature Series (Fowler). Pearson Education, 2012. ISBN: 9780133065213. URL: https://books.google.de/books?id=vqTfNFDzzdIC.

[6] *Material Point Method*. 2020. URL: https://wmcoombs.github.io/mpm/ (visited on 05/15/2020).

[7] Ben H. Thacker et al. *Concepts of Model Verification and Validation*. LA-14167-MS. Los Alamos National Laboratory, 2020. URL: https://www.osti.gov/servlets/purl/835920/ (visited on 07/20/2020).

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A. All acronyms

Acronyms

Label	Acronym	Description
acr:4ENF	4ENF	4-point end-notched flexure
acr:4PBP	4PBP	4-point bending plate
acr:6ECT	6ECT	6-point edge crack torsion
acr:6PBP	6PBP	6-point bending plate
acr:8PBP	8PBP	8-point bending plate
acr:AC	AC	advisory circular
acr:ACARE	ACARE	advisory council for aviation research and innovation in europe
acr:ACO	ACO	ant colony optimisation
acr:ADCB	ADCB	asymmetric double cantilever beam
acr:ADL	ADL	allowable damage limit
acr:ADS	ADS	advancing UK aerospace, defence, security & space industries
acr:AECMA	AECMA	European association of aerospace industries
acr:AFP	AFP	automated fibre placement
acr:AI	AI	artificial intelligence
acr:AIA	AIA	aerospace industries association
acr:AIAD	AIAD	federazione aziende italiane per l'aerospazio, la difesa e la sicurezza
acr:AITM	AITM	Airbus industries test method
acr:ALE	ALE	arbitrary Lagrangian-Eularian
acr:ALM	ALM	additive layer manufacturing
acr:AMC	AMC	acceptable means of compliance
acr:AMM	AMM	aircraft maintenance manual
acr:API	API	application programming interface
acr:APU	APU	auxiliary power unit
acr:ASD	ASD	aerospace and defence industries association of europe
acr:ASTM	ASTM	American society for testing and materials
acr:BB	BB	bond-based
acr:BB-PD	BB-PD	bond-based peridynamics
acr:BC	BC	boundary condition
acr:BEM	BEM	boundary element method

acr:BFGS	BFGS	Broydon-Fletcher-Goldfarb-Shanno
acr:BLI	BLI	boundary layer ingestion
acr:BMI	BMI	bismaleimide
acr:BOM	BOM	bill of material
acr:BS	BS	british standard
acr:BSD	BSD	Berkeley software distribution
acr:BVID	BVID	barely visible impact damage
acr:BVP	BVP	boundary value problem
acr:BWA	BWA	box-wing aircraft
acr:BWB	BWB	blended wing body
acr:CA	CA	consortium agreement
acr:CAD	CAD	computer-aided design
acr:CAE	CAE	computer-aided engineering
acr:CAGR	CAGR	compound annual growth rate
acr:CAI	CAI	compression after impact
acr:CAM	CAM	computer-aided manufacturing
acr:CAS	CAS	calibrated air speed
acr:CAx	CAx	computer-aided system
acr:CBA	CBA	cost benefit analysis
acr:CbA	CbA	certification by analysis
acr:CCAI	CCAI	cyclic compression after impact
acr:CCM	CCM	classical continuum mechanic
acr:CDM	CDM	continuum damage mechanics
acr:CDR	CDR	critical design review
acr:CDS	CDS	central difference scheme
acr:CE	CE	constraint equation
acr:CEL	CEL	coupled Eulerian-Lagrangian
acr:CELS	CELS	calibrated end-loaded split
acr:CEN	CEN	comité européenne normalisation
acr:CER	CER	composite engineering requirements
acr:CFEP	CF/EP	carbon fibre/epoxy
acr:CFD	CFD	computational fluid dynamics
acr:CFL	CFL	Courant-Friedrichs-Lewy
acr:CFRP	CFRP	carbon fibre reinforced plastic
acr:CG	CG	centre of gravity
acr:CLA	CLA	contributor license agreement
acr:CLC	CLC	combined loading compression
acr:CLS	CLS	cracked lap shear
acr:CLT	CLT	classical laminate theory
acr:CM	CM	continuum mechanic
acr:CME	CME	coefficient of moisture expansion
acr:CMM	CMM	compact mixed mode
acr:CMR	CMR	certification maintenance requirements

acr:CPACS	CPACS	common parametric aircraft configuration schema
acr:CPPS	CPPS	cyber-physical production system
acr:CPS	CPS	cyber-physical system
acr:CPU	CPU	central processing unit
acr:CRAG	CRAG	composite research advisory group
acr:CRI	CRI	certification review item
acr:CRS	CRS	crack rail shear
acr:CS	CS	certification specification
acr:CSM	CSM	computational structural mechanics
acr:CT2	CT	compact tension
acr:CT	CT	computed tomography
acr:CTE	CTE	coefficient of thermal expansion
acr:CTT	CTT	compact tension test
acr:CWB	CWB	center wing box
acr:CZM	CZM	cohesive zone model
acr:DCB	DCB	double cantilever beam
acr:DDMS	DDMS	digital design, manufacturing and services
acr:DEA	DEA	dielectrical analysis
acr:DELiS	DELiS	design environment for lightweight structures
acr:DENF	DENF	double end-notched flexure
acr:DFP	DFP	dry fibre placement
acr:DGO	DGO	direct gradient-based optimization
acr:DIC	DIC	digital image correlation
acr:DIN	DIN	Deutsches Institut für Normung
acr:DIS	DIS	draft international standard
acr:DKT	DKT	discrete Kirchhoff theory
acr:DLJ	DLJ	double lap joint
acr:DLR:de	DLR	Deutsches Zentrum für Luft- und Raumfahrt e.V.
acr:DLR:en	DLR	German Aerospace Center
acr:DLR	DLR	German Aerospace Center
acr:DMA	DMA	dynamic mechanical analysis
acr:DMMB	DMMB	dissimilar mixed-mode bending
acr:DMS	DMS	data management system
acr:DMTA	DMTA	dynamic mechanical thermal analysis
acr:DMU	DMU	digital mock-up
acr:DNS	DNS	direct numerical simulation
acr:DNSCB	DNSCB	double-notched split cantilever beam
acr:DOA	DOA	design organization approval
acr:DOC	DOC	direct operating costs
acr:DOE	DOE	design of experiments
acr:DOF	DOF	degree of freedom
acr:DOI	DOI	digital object identifier
acr:DSC	DSC	differential scanning calorimetry

acr:DSG	DSG	design service goal
acr:DSM	DSM	design structure matrix
acr:DT	DT	damage tolerance
acr:DTO	DTO	data transfer object
acr:E2E	E2E	end to end
acr:EA	EA	evolutionary algorithm
acr:EAQG	EAQG	European aerospace quality group
acr:EAS	EAS	equivalent air speed
acr:EASA	EASA	European aviation safety agency
acr:ECT	ECT	edge crack tension
acr:EDA	EDA	European defence agency
acr:EDIG	EDIG	European defence industries group
acr:EFG	EFG	element-free Galerkin
acr:EFGM	EFGM	element-free Galerkin method
acr:EIS	EIS	entry into service
acr:EKDF	EKDF	environment knock-down factor
acr:ELS	ELS	end-loaded split
acr:EN	EN	european norm
acr:ENF	ENF	end-notched flexure
acr:EOM	EOM	equation of motion
acr:EOS	EOS	equation of state
acr:EP	EP	epoxy
acr:ERP	ERP	enterprise resource planning
acr:ERR	ERR	energy release rate
acr:ESG	ESG	extended service goal
acr:ESIS	ESIS	European structural integrity society
acr:EUROCAE	EUROCAE	European organization for civil aviation equipment
acr:EWVT	EWVT	extended weighted Voronoi tesselation
acr:FaDT	F&DT	fatigue and damage tolerance
acr:FAA	FAA	Federal Aviation Administration
acr:FAIR	FAIR	findable, accessible, interoperable, usable
acr:FAL	FAL	final assembly line
acr:FAR	FAR	federal aviation regulations
acr:FAW	FAW	fibre areal weight
acr:FBG	FBG	fibre bragg grating
acr:FCM	FCM	finite cell method
acr:FDM	FDM	finite difference method
acr:FDT	FDT	functional dependency table
acr:FE	FE	finite element
acr:FEA	FEA	finite element analysis
acr:FEM	FEM	finite element method
acr:FFA	FFA	fast Fourier analysis

acr:FFT	FFT	fast Fourier transform
acr:FGM	FGM	functionally graded materials
acr:FHC	FHC	filled hole compression
acr:FML	FML	fibre metal laminate
acr:FMU	FMU	functional mock-up unit
acr:FOM	FOM	figure of merit
acr:FOSS	FOSS	free and open-source software
acr:FOT	FOT	fibre-optical temperature
acr:FPD	FPD	formalised process description
acr:FPF	FPF	first ply failure
acr:FRF	FRF	frequency response function
acr:FRP	FRP	fiber reinforced plastic
acr:FSDT	FSDT	first-order shear deformation theory
acr:FSI	FSI	fluid-structure interaction
acr:FSW	FSW	friction stir welding
acr:FTE	FTE	full time equivalent
acr:FTF	FTF	flap track faring
acr:FTI	FTI	flight test installation
acr:FTIR	FTIR	Fourier transform infrared spectoscropy
acr:FV	FV	finite volume
acr:FVC	FVC	fibre volume content
acr:FVM	FVM	finite volume method
acr:GA	GA	genetic algorithm
acr:GCI	GCI	grid convergence index
acr:GFEM	GFEM	global finite element model
acr:GIFAS	GIFAS	groupement des industries françaises aéronautiques et spatiales
acr:GLARE	GLARE	glass laminate aluminum reinforced epoxy
acr:GPL	GPL	GNU General Public License
acr:GSE	GSE	ground support equipment
acr:GUI	GUI	graphical user interface
acr:HW	H/W	hot/wet
acr:HDF5	HDF5	hierarchical data format
acr:HFEC	HFEC	high frequency eddy current
acr:HM	HM	high modulus
acr:HMS	HMS	high modulus/high strength
acr:HPC	HPC	high performance computing
acr:HSB	HSB	Handbuch Struktur Berechnung
acr:HST	HST	high failure strain
acr:HT	HT	high tenacity
acr:HTP	HTP	horizontal tail plane

acr:IO	I/O	input and output
acr:IAB	IAB	industrial advisory board
acr:IAQG	IAQG	international aerospace quality group
acr:IAS	IAS	indicated air speed
acr:ICAO	ICAO	international civil aviation organization
acr:IDE	IDE	integrated development environment
acr:IEEE	IEEE	institute of electrical and electronics engineers
acr:IFF	IFF	inter fibre failure
acr:IFSS	IFSS	interfacial shear strength
acr:IGA	IGA	isogeometric analysis
acr:IITRI	IITRI	Illinois institute of technology research institute
acr:ILSS	ILSS	interlaminar shear strength
acr:IM	IM	intermediate modulus
acr:IPO	IPO	input-process-output
acr:IPS	IPS	individual product specification
acr:IR	IR	infrared
acr:ISO	ISO	international organization for standardization
acr:ISPH	ISPH	incompressible smoothed particle hydrodynamics
acr:IT	IT	information technology
acr:JAA	JAA	joint aviation authorities
acr:JAR	JAR	joint aviation requirements
acr:jCoMoT	jCoMoT	Java computational mechanics format translator
acr:JIS	JIS	Japan industrial standard
acr:jMeS	jMeS	Java mechanics suite
acr:JSON	JSON	JavaScript object notation
acr:JVM	JVM	Java virtual machine
acr:KDF	KDF	knock-down factor
acr:KPI	KPI	key performance indicator
acr:LCA	LCA	life cycle assessment
acr:LCM	LCM	liquid composite moulding
acr:LDS	LDS	life data sheet
acr:LEF	LEF	load eleviation factor
acr:LEFM	LEFM	linear-elastic fracture mechanics
acr:LES	LES	large eddy simulation
acr:LL	LL	limit load
acr:LPF	LPF	last ply failure
acr:LPS	LPS	linear peridynamic solid
acr:LSP	LSP	lightning strike protection
acr:LVI	LVI	low-velocity impact
acr:MAC	MAC	mean aerodynamic chord

acr:MAE	MAE	mean absolute error
acr:MBS	MBS	multibody simulation
acr:MBSE	MBSE	model-based systems engineering
acr:MDA	MDA	multi-disciplinary analysis
acr:MDAO	MDAO	multi-disciplinary analysis and optimization
acr:MDO	MDO	multi-disciplinary optimization
acr:MES	MES	manufacturing execution system
acr:MiniTED	Mini-TED	mini trailing edge device
acr:MITC	MITC	mixed interpolation of tensorial components
acr:ML	ML	machine learning
acr:MLG	MLG	main landing gear
acr:MLM	MLM	modified Logvinovich model
acr:MMB	MMB	mixed-mode bending
acr:MMFD	MMFD	modified method of feasible direction
acr:MMS	MMS	method of manufactured solutions
acr:MoC	MoC	means of compliance
acr:MOR	MOR	model order reduction
acr:MoS	MoS	margin of safety
acr:MPC	MPC	multi-point constraint
acr:MPD	MPD	maintenance planning document
acr:MPI	MPI	message passing interface
acr:MPM	MPM	material point method
acr:MRL	MRL	manufacturing readiness level
acr:MRO	MRO	maintenance, repair and overhaul
acr:MTOW	MTOW	maximum take-off weight
acr:MVI	MVI	modified vacuum infusion process
acr:MWE	MWE	manufacturing weight empty
acr:MZFW	MZFW	maximum zero fuel weight
acr:NASA	NASA	national aeronautics and space administration
acr:NAV	NAV	numeical algorithm verification
acr:NCF	NCF	non-crimp fabric
acr:NDA	NDA	non-disclosure agreement
acr:NDI	NDI	non-destructive inspection
acr:NDT	NDT	non-destructive testing
acr:NF	NF	normes françaises
acr:NFC	NFC	near filed communication
acr:NGO	NGO	non-gradient based optimization
acr:NLG	NLG	nose landing gear
acr:NRC	NRC	non-recurring cost
acr:NSB	NSB	non-ordinary state-based
acr:NSB-PD	NSB-PD	non-ordinary state-based peridynamics
acr:NSGAII	NSGAII	non-dominated sorting genetic algorithm II
acr:NTSB	NTSB	national transportation safety board

acr:NVH	NVH	noise, vibration harshness
acr:OA	OA	open access
acr:ODE	ODE	ordinary differential equation
acr:OEM	OEM	original equipment manufacturer
acr:OHC	OHC	open hole compression
acr:OHT	OHT	open hole tension
acr:OLB	OLB	over-leg bending
acr:OLP	OLP	offline programming
acr:ONF	ONF	over-notched flexure
acr:OOA	OOA	out-of-autoclave
acr:OSB	OSB	ordinary state-based
acr:OSB-PD	OSB-PD	ordinary state-based peridynamics
acr:PaP	P&P	P&P
acr:PBC	PBC	periodic boundary condition
acr:PCMM	PCMM	predictive capability maturity model
acr:PD	PD	peridynamic
acr:PDE	PDE	partial differential equation
acr:PDF	PDF	probability density function
acr:PDM	PDM	product data management
acr:PDR	PDR	preliminary design review
acr:PEEK	PEEK	polyetheretherketon
acr:PEI	PEI	polyetherimid
acr:PENF	PENF	prestressed end-notched flexure
acr:PF	PF	progressive failure
acr:PFST	PFST	picture frame shear test
acr:PI	PI	polyimid
acr:PICM	PICM	particle-in-cell method
acr:PIRT	PIRT	phenomena identification and ranking table
acr:PLB	PLB	pin loaded bearing
acr:PLM	PLM	product lifecycle management
acr:PLT	PLT	pin loaded tension
acr:PMC	PMC	polymer matrix composite
acr:PO	PO	Pareto optimal
acr:POJO	POJO	plain old Java object
acr:prEN	prEN	preliminary european norm
acr:PSCB	PSCB	prestressed split cantilever beam
acr:PSE	PSE	principal structural element
acr:PSO	PSO	particle swarm optimisation
acr:QA	QA	quality assurance
acr:QI	QI	quasi-isotropic
acr:QM	QM	quality management

acr:QMS	QMS	quality management system
acr:QOI	QOI	quantity of interest
acr:RaD	R&D	research and development
acr:RANS	RANS	Reynolds averaged Navior-Stokes
acr:RAR	RAR	requirement allocation review
acr:RBF	RBF	radial basis function
acr:RC	RC	recurring cost
acr:RCE	RCE	remote component environment
acr:RF	RF	reserve factor
acr:RFI	RFI	resin film infusion
acr:RFID	RFID	radio frequency identification
acr:RFLP	RFLP	requirement, functional, logical and physical
acr:RMS	RMS	risk mitigation structure
acr:RMSE	RMSE	root mean squared error
acr:ROM	ROM	reduced order modeling
acr:RPB	RPB	rear pressure bulkhead
acr:RPK	RPK	revenue passenger kilometers
acr:RRSE	RRSE	root relative squared error
acr:RSE	RSE	relative squared error
acr:RT	RT	room temperature
acr:RTCA	RTCA	radio technical commission for aeronautics
acr:RTM	RTM	resin transfer molding
acr:RVE	RVE	representative volume element
acr:SACMA	SACMA	suppliers of advanced composite materials association
acr:SAE	SAE	society of automotive engineers
acr:SAI	SAI	shear after impact
acr:SAM	SAM	space allocation model
acr:SB-PD	SB-PD	state-based peridynamics
acr:SBW	SBW	strut-braced wing
acr:SC	SC	steering committee
acr:SCB2	SCB	single cantilever beam
acr:SCB	SCB	split cantilever beam
acr:SCM2	SCM	source code management
acr:SCM	SCM	supply chain management
acr:SDM	SDM	simulation data management
acr:SEM	SEM	scanning electron microscopy
acr:SENB	SENB	single-edge-notched bend
acr:SERR	SERR	strain energy release rate
acr:SHM	SHM	structural health monitoring
acr:SLB	SLB	single leg bending
acr:SLFPB	SLFPB	single-leg four point bending

acr:SLJ	SLJ	single lap joint
acr:SLP	SLP	sequential linear programming
acr:SMA	SMA	shape memory alloy
acr:SMART	SMART	specific, measurable, achievable, reasonable, time-bound
acr:SMT	SMT	shear-moment-torque
acr:SoC	SoC	separation of concerns
acr:SOFF	SOFF	säkerhets- och försvarsföretagen
acr:SPDM	SPDM	simulation process & data management
acr:SPDR	SPDR	system preliminary design review
acr:SPH	SPH	smoothed particle hydrodynamics
acr:SQA	SQA	software quality assurance
acr:SQE	SQE	software quality engineering
acr:SQP	SQP	sequential quadratic programming
acr:SRM:SACMA	SRM	SACMA recommended methods
acr:SRM	SRM	structural repair manual
acr:SRR	SRR	system requirement review
acr:SSD	SSD	steady state dynamics
acr:STC	STC	supplemental type certificate
acr:STOVL	STOVL	short take-off vertical landing
acr:SVD	SVD	singular value decomposition
acr:SVM	SVM	support vector machines
acr:TAI	TAI	tension after impact
acr:TAS	TAS	true air speed
acr:TC	TC	thermocouple
acr:TDCB	TDCB	tapered double cantilever beam
acr:TED	TED	trailing edge device
acr:TEDAE	TEDAE	asociación Española de tecnologías de defensa, aeronáutica y espacio
acr:TFP	TFP	tailored fibre placement
acr:TGA	TGA	thermo-gravimetric analysis
acr:TLAR	TLAR	top-level aircraft requirement
acr:TMA	TMA	thermo-mechanical analysis
acr:TRL	TRL	technology readiness level
acr:TSDT	TSDT	third-order shear deformation theory
acr:UAV	UAV	unmanned aerial vehicle
acr:UD	UD	unidirectional
acr:UHM	UHM	ultra high modulus
acr:UID	UID	unique identifier
acr:UL	UL	ultimate load
acr:UML	UML	unified modeling language
acr:US	US	ultrasonic

acr:UUID	UUID	universally unique identifier
acr:UV	UV	ultraviolet
acr:VaV	V&V	verification & validation
acr:VAP	VAP	vacuum-assisted process
acr:VARI	VARI	vacuum-assisted resin infusion
acr:VARTM	VARTM	vacuum-assisted resin transfer molding
acr:VCCT	VCCT	virtual crack closure technique
acr:VCS	VCS	version control system
acr:VCT	VCT	vibration correlation technique
acr:VID	VID	visible impact damage
acr:VPE	VPE	virtual product engineering
acr:VPH	VPH	Virtual Product House
acr:VT	VT	virtual testing
acr:VTOL	VTOL	vertical take-off and landing
acr:VTP	VTP	vertical tail plane
acr:W3C	W3C	world wide web consortium
acr:WCSPH	WCSPH	weakly compressible smoothed particle hydrodynamics
acr:WORA	WORA	write once, run anywhere
acr:WP	WP	work package
acr:WVT	WVT	weighted Voronoi tesselation
acr:XDMF	XDMF	eXtensible data model and format
acr:XDSM	XDSM	extended design structure matrix
acr:XFEM	XFEM	extended finite element method
acr:XML	XML	extensible markup language
acr:XSD	XSD	XML schema definition
acr:XSPH	XSPH	eXtended smoothed particle hydrodynamics
acr:YAML	YAML	YAML ain't markup language

B. All glossary entries

Glossary

Label	Entry	Sources

glo:allowable allowable [1]
Material values that are determined from test data at the laminate or lamina level on a probability basis (e.g., A or B basis values, with 99% probability and 95% confidence, or 90% probability and 95% confidence, respectively). The amount of data required to derive these values is governed by the statistical significance (or basis) needed.

glo:API API
An Application Programming Interface is a particular set of rules and specifications that a software program can follow to access and make use of the services and resources provided by another particular software program that implements that API

glo:calibration Calibration [2]
The process of adjusting physical modelling parameters in the computational model to improve agreement with experimental data.

glo:adequacy calibration [3]
The condition of satisfying all requirements for model acceptance, including those for model accuracy and for programmatic constraints such as implementation, cost, maintenance, and ease of use.

glo:calculation:verification calibration [3]
The process of determining the solution accuracy of a particular calculation

glo:calibration:experiment calibration experiment [3]
An experiment performed to improve estimates of some parameters in the mathematical model.

glo:code code [3]
The computer implementation of algorithms developed to facilitate the formulation and approximate solution of a class of problems.

glo:component component [1]
A major section of the airframe structure (e.g., wing, body, fin, horizontal stabilizer) which can be tested as a complete unit to qualify the structure.

glo:model:conceptual conceptual model [3]
The process of determining that the numerical algorithms are correctly implemented in the computer code and of identifying errors in the software.

glo:coupon coupon [1]
A small test specimen (e.g., usually a flat laminate) for evaluation of basic lamina or laminate properties or properties of generic structural features (e.g., bonded or mechanically fastened joints).

glo:damage damage [1]
A structural anomaly caused by manufacturing (processing, fabrication, assembly or handling) or service usage.

glo:delamination delamination [1]
The separation of the layers of material in a laminate. This may be local or may cover a large area of the laminate. It may occur at any time in the cure or subsequent life of the laminate and may arise from a wide variety of causes.

glo:design:values design values [1]
Material, structural elements, and structural detail properties that have been determined from test data and chosen to assure a high degree of confidence in the integrity of the completed structure. These values are most often based on allowables adjusted to account for actual structural conditions, and used in analysis to compute margins-of-safety.

glo:detail detail [1]
A non-generic structural element of a more complex structural member (e.g., specific design configured joints, splices, stringers, stringer runouts, or major access holes).

glo:disbond detail [1]
An area within a bonded interface between two adherends in which an adhesion failure or separation has occurred. It may occur at any time during the life of the substructure and may arise from a wide variety of causes. Also, colloquially, an area of separation between two laminae in the finished laminate (in this case, the term "delamination" is normally preferred).

glo:digitaltwin:aiaa digital twin [4]
A set of virtual information constructs that mimics the structure, context and behavior of an individual / unique physical asset, or a group of physical assets, is dynamically updated with data from its physical twin throughout its life cycle and informs decisions that realize value.

glo:DTO DTO [5]
An object that carries data between processes in order to reduce the number of method calls.

glo:element element [1]
A generic element of a more complex structural member (e.g., skin, stringers, shear panels, sandwich panels, joints, or splices).

glo:environment environment [1]
External, non-accidental conditions (excluding mechanical loading), separately or in combination, that can be expected in service and which may affect the structure (e.g., temperature, moisture, UV radiation, and fuel).

glo:MPM MPM [6]
The Material Point Method is an alternative to pure Lagrangian approaches and is well suited to problems involving very large deformations. In the method, equilibrium computations take place on a background grid but the calculations are based on information (mass, volume, stress, state variables, etc.) held at material points that are convected through the background grid as the material deforms. This allows computations to take place on an undistorted background mesh (structured or unstructured) whilst modelling problems involving very large deformations. One way to summarise the material point method is: a finite element method where the integration points (material points) are allowed to move independently of the mesh.

glo:simulation Simulation [7]
The ensemble of models - deterministic, load, boundary, material, performance, and uncertainty - that are exercised to produce a simulation outcome.

glo:bonding:structural structural bonding [1]
A structural joint created by the process of adhesive bonding, comprising of one or more previously-cured composite or metal parts (referred to as adherends)

glo:bond:weak Weak bond [1]
A bond line with mechanical properties lower than expected, but without any possibility to detect that by normal NDI procedures. Such situation is mainly due to a poor chemical bonding.

C. All symbols

Scalars

Label	Symbol
sym:scalar:csys:material:component:1	1
sym:scalar:csys:material:component:2	2
sym:scalar:csys:material:component:3	3
sym:scalar:acceleration	a
sym:scalar:load:bodyforce	b
sym:scalar:pd:bond:constant	c
sym:scalar:geo:diameter	d
sym:scalar:pd:bond:elongation	e
sym:scalar:thickness	h
sym:scalar:geo:r1:length	l
sym:scalar:mass	m
sym:scalar:pd:volume:weighted	m_V
sym:scalar:pd:stretch	s
sym:scalar:pd:stretch:critical	s_C
sym:scalar:time	t
sym:scalar:timestep	Δt
sym:scalar:displacement	u
sym:scalar:displacement:component:global:x	u_x
sym:scalar:displacement:component:global:y	u_y
sym:scalar:displacement:component:global:z	u_z
sym:scalar:velocity	v
sym:scalar:pd:bond:energy:potential	w
sym:scalar:csys:structure:global:component:1	x
sym:scalar:csys:structure:local:component:1	$\hat{x}$
sym:scalar:csys:structure:global:component:2	y
sym:scalar:csys:structure:local:component:2	$\hat{y}$
sym:scalar:csys:structure:global:component:3	z
sym:scalar:csys:structure:local:component:3	$\hat{z}$
sym:scalar:scalarromannull	
sym:scalar:geo:r2:surface	A
sym:scalar:mech:tensor:component:stiffness	C
sym:scalar:mat:modulus:young	E
sym:scalar:load:force	F
sym:scalar:mat:modulus:shear	G
sym:scalar:mat:energyreleaserate	G_0

sym:scalar:mat:energyreleaserate:critical	G_{0C}
sym:scalar:mat:energyreleaserate:mode:I	G_I
sym:scalar:mat:energyreleaserate:critical:mode:I	G_{IC}
sym:scalar:mat:energyreleaserate:mode:II	G_{II}
sym:scalar:mat:energyreleaserate:critical:mode:II	G_{IIC}
sym:scalar:pd:family	$\mathcal{H}$
sym:scalar:mat:modulus:bulk	K
sym:scalar:load:moment	M
sym:scalar:fe:shapefunction	N
sym:scalar:mat:strength	R
sym:scalar:system:euclidean	$\mathbb{R}$
sym:scalar:temperature	T
sym:scalar:geo:r3:volume	V
sym:scalar:mech:energy:strain:density	W
sym:scalar:pd:function:damage:bond	χ
sym:scalar:pd:horizon	δ
sym:scalar:geo:separation	δ_c
sym:scalar:mech:strain:normal:engineering	ε
sym:scalar:mech:strain:tensor:component	ϵ
sym:scalar:csys:natural:component:2	η
sym:scalar:mech:strain:shear:engineering	γ
sym:scalar:mat:poissonratio	ν
sym:scalar:domain:partial	ω
sym:scalar:pd:function:influence	ω
sym:scalar:pd:function:influence:radial	$\omega_{\boldsymbol{\xi}}$
sym:scalar:pd:function:damage:family	φ
sym:scalar:rotation	ψ
sym:scalar:mat:density	ρ
sym:scalar:mech:stress:normal:engineering	σ
sym:scalar:mech:stress:shear:engineering	τ
sym:scalar:pd:dilatation	θ
sym:scalar:geo:angle:debonding	θ_c
sym:scalar:csys:natural:component:1	ξ
sym:scalar:pd:bond:undeformed:component	ξ
sym:scalar:csys:natural:component:3	ζ
sym:scalar:scalargreeknull	
sym:scalar:discretization:distance:node	Δx
sym:scalar:domain:boundary	Γ
sym:scalar:domain	Ω

Vectors

Label	Symbol
sym:vector:pd:bond:deformed	$\boldsymbol{\eta}$
sym:vector:pd:bond:undeformed	$\boldsymbol{\xi}$
sym:vector:load:bodyforce	$\mathbf{b}$
sym:vector:unit	$\mathbf{e}$
sym:vector:pd:force	$\mathbf{f}$
sym:vector:mech:strain	$\boldsymbol{\varepsilon}$
sym:vector:mech:stress:cauchy	$\boldsymbol{\sigma}$
sym:vector:pd:bondforcedensity	$\mathbf{t}$
sym:vector:mech:deformation	$\mathbf{u}$
sym:vector:mech:acceleration	$\ddot{\mathbf{u}}$
sym:vector:mech:velocity	$\dot{\mathbf{u}}$
sym:vector:position:undeformed	$\mathbf{x}$
sym:vector:position:deformed	$\mathbf{y}$

Matrices & Tensors

Label	Symbol
sym:matrix:laminate:membrane	$\mathbf{A}$
sym:matrix:laminate:coupling	$\mathbf{B}$
sym:matrix:mat:stiffness	$\mathbf{C}$
sym:matrix:mech:tensor:stiffness	$\mathbf{K}$
sym:matrix:laminate:bending	$\mathbf{D}$
sym:matrix:mech:strain:green	$\mathbf{E}$
sym:matrix:mech:gradient:deformation	$\mathbf{F}$
sym:matrix:laminate:shear	$\mathbf{H}$
sym:matrix:mech:gradient:displacement	$\mathbf{H}$
sym:matrix:identity	$\mathbf{I}$
sym:matrix:interpolationoperator	$\mathbf{I}_\Gamma$
sym:matrix:jacobian	$\mathbf{J}$
sym:matrix:mech:tensor:shape	$\mathbf{K}$
sym:matrix:stiffness	$\mathbf{K}$
sym:matrix:mass	$\mathbf{M}$
sym:matrix:mech:stress:piolakirchhoff:first	$\mathbf{P}$
sym:matrix:laminate:ply:stiffness	$\mathbf{Q}$
sym:matrix:mat:compliance	$\mathbf{S}$
sym:matrix:mech:stress:piolakirchhoff:second	$\mathbf{S}$

sym:matrix:transformation	$\mathbf{T}$

States

Label	Symbol
sym:state:scalar:influence	$\underline{\omega}$
sym:state:scalar:extension	$\underline{e}$
sym:state:scalar:force	$\underline{t}$
sym:state:scalar:position:undeformed	$\underline{x}$
sym:state:scalar:position:deformed	$\underline{y}$
sym:state:scalar:stateromannull	
sym:state:vector:force	$\underline{\mathbf{T}}$
sym:state:vector:direction:deformed	$\underline{\mathbf{M}}$
sym:state:vector:position	$\underline{\mathbf{X}}$
sym:state:vector:deformation	$\underline{\mathbf{Y}}$
sym:state:vector:stateromannull	
sym:state:double:modulus	$\underline{\mathbb{K}}$

Indices

Label	Symbol
sym:index:zero	0
sym:index:csys:material:component:1	1
sym:index:csys:material:component:2	2
sym:index:csys:material:component:3	3
sym:index:csys:material:components	$1, 2, 3$
sym:index:csys:natural:component:1	ξ
sym:index:csys:natural:component:2	η
sym:index:csys:natural:component:3	ζ
sym:index:csys:natural:components	ξ, η, ζ
sym:index:hardening	H
sym:index:csys:structure:component:1	x
sym:index:csys:structure:component:2	y
sym:index:csys:structure:component:3	z
sym:index:csys:structure:components	x, y, z
sym:index:mat:damage:mode:I	I
sym:index:mat:damage:mode:II	II

sym:index:mat:damage:mode:III	III
sym:index:load:compression	C
sym:index:load:compression:long	cmp
sym:index:critical	C
sym:index:init	init
sym:index:load:shear	S
sym:index:load:shear:long	shr
sym:index:load:tension	T
sym:index:load:tension:long	ten
sym:index:yield	y

Exponents

Label	**Symbol**
sym:exponent:midplane	0
sym:exponent:deviatoric	d
sym:exponent:elastic	e
sym:exponent:linear	l
sym:exponent:nonlinear	nl
sym:exponent:plastic	p
sym:exponent:volumetric	v

Operators

Label	**Symbol**
sym:operator:csys:local	$(\hat{\ })$
sym:operator:csys:material	$(\bar{\ })$
sym:operator:Delta	$\Delta(\ )$
sym:operator:differential:Newton	$(\dot{\ })$
sym:operator:differential:Newton:2	$(\ddot{\ })$
sym:operator:differential:partial:short	$(\ )_{,x}$
sym:operator:differential:Euler	$\mathrm{D}(\ )$
sym:operator:differential:Lagrange	$(\ )'$

sym:operator:differential:Leibnitz	$\mathrm{d}(\ )$
sym:operator:differential:partial	$\partial(\ )$
sym:operator:divergence	$\mathrm{div}(\ )$
sym:operator:product:dot	$\cdot$
sym:operator:kroneckerdelta	δ_{ij}
sym:operator:matrix:inverse	$(\ )^{-1}$
sym:operator:matrix:transpose	$(\ )^{T}$
sym:operator:mean	$\overline{(\ )}$
sym:operator:derivative:frechet	$\nabla(\ )$
sym:operator:norm	$\|(\ )\|$
sym:operator:product:tensor	$\otimes$

D. The code

D.1. stmglossaries.sty

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Header                              %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%
% This file includes the common LaTeX
% glossaries definitions
% (acronyms, glossaries, symbols)
% for structural mechanics
% Based upon the glossaries package:
%   https://ctan.org/pkg/glossaries
%
% Usage
%  - Preamble:
%    - \usepackage{stmglossaries}
%    - \makeglossaries
%  - Document: e.g. (Adapt to your type of glossary item)
%    - \printglossary[type=\acronymtype] or
%    - \printglossary[type=\acronymtype,nonumberlist]
%  - Compilation: e.g. (Adapt to your type of glossary item)
%    - makeindex -s [MYTEXFILENAME].ist -o [MYTEXFILENAME].acr [
    MYTEXFILENAME].acn
%
% Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
%                       Initial draft
%
% Contact:   Martin Raedel,  martin.raedel@dlr.de
%            DLR Lightweight Systems
%
%                                  __/|__
%                                 /_/_/_/
%            www.dlr.de/sy/en       |/ DLR
%
% Copyright (C) 2019-... DLR Lightweight Systems
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Content                             %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% Declare that this style file requires at least LaTeX version 2e.
\NeedsTeXFormat{LaTeX2e}
```

```
40
41 % Provide the name of your page, the date it was last updated, and a
       comment about what it's used for
42 \ProvidesPackage{stmglossaries}[2023/02/12 STMs custom LaTeX glossaries
       definitions]
43
44 % ---------------------------
45 % Options
46 % ---------------------------
47
48 % For options
49 \@ifpackageloaded{kvoptions}{}{\RequirePackage{kvoptions}}%
50
51 \SetupKeyvalOptions{%
52   family=stmglossaries,%
53   prefix=stmglossaries@,%
54   setkeys=\kvsetkeys,%
55 }
56
57 % Acronyms
58 \DeclareBoolOption[true]{acronyms}
59
60 % Acronyms
61 \DeclareBoolOption[false]{glossary}
62
63 % Symbols
64 \DeclareBoolOption[true]{symbols}
65
66 % Load items
67 \DeclareBoolOption[true]{items}
68
69 % Load styles
70 \DeclareBoolOption[true]{styles}
71
72 % Load commands
73 \DeclareBoolOption[true]{commands}
74
75 % Load morewrites
76 \DeclareBoolOption[true]{morewrites}
77
78 % Load morewrites
79 \DeclareBoolOption[true]{makeglossaries}
80
81 % Automatically add the corresponding glossary entry to the acronym
```

```
\DeclareBoolOption[false]{autoaddglossaryentrytoacronym}

% Add a link from the acronym to the glossary entry
\DeclareBoolOption[false]{linkacronymtoglossary}

% Process options
\ProcessKeyvalOptions{stmglossaries}

% ----------------------------
% Load the base package
% ----------------------------

% If not loaded in advance, load the glossaries package with some default
    options
\@ifpackageloaded{stmglossariesbase}{}{\RequirePackage{stmglossariesbase
   }}%

% ----------------------------
% Modules 1
% newglossary can only be used before makeglossaries
% ----------------------------

% Load morewrites
\@ifpackageloaded{morewrites}{}{%
  \ifstmglossaries@morewrites%
    \RequirePackage{morewrites}%
  \fi%
}%

% Load the symbols
\ifstmglossaries@symbols
  \@ifpackageloaded{stmglossariessymbols}{}{%
    \RequirePackage[%
      commands={\ifstmglossaries@commands true\else false\fi},%
      items={\ifstmglossaries@items true\else false\fi},%
      styles={\ifstmglossaries@styles true\else false\fi},%
    ]{stmglossariessymbols}%
  }%
\fi

% ----------------------------
% Makeglossaries command
% ----------------------------

```

```
\ifstmglossaries@makeglossaries
  \@ifpackageloaded{etoolbox}{}{%
    \RequirePackage{etoolbox}
  }

  % May not be at \AtEndPreamble in case the original implementation of "see" key in glossaryentry definition is used.
  \AtEndPreamble{%
    \makeglossaries%
  }
\fi

% ----------------------------
% Modules 2
% ----------------------------

% Load the glossary
\ifstmglossaries@glossary
  \@ifpackageloaded{stmglossariesglossary}{}{%
    \RequirePackage[%
      commands={\ifstmglossaries@commands true\else false\fi},%
      items={\ifstmglossaries@items true\else false\fi},%
      styles={\ifstmglossaries@styles true\else false\fi},%
    ]{stmglossariesglossary}%
  }%
\fi

% Load the acronyms
\ifstmglossaries@acronyms
  \@ifpackageloaded{stmglossariesacronyms}{}{%
    \RequirePackage[%
      commands={\ifstmglossaries@commands true\else false\fi},%
      items={\ifstmglossaries@items true\else false\fi},%
      styles={\ifstmglossaries@styles true\else false\fi},%
      autoaddglossaryentry={\ifstmglossaries@autoaddglossaryentrytoacronym true\else false\fi},%
      linktoglossary={\ifstmglossaries@linkacronymtoglossary true\else false\fi},%
    ]{stmglossariesacronyms}%
  }%
\fi

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% That's it                          %
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%
% Finally, we'll use \endinput to indicate that LaTeX can stop reading
    this file. LaTeX will ignore anything after this line.
\endinput
```

D.2. stmglossariesbase.sty

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Header                             %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%
% This file includes the common LaTeX
% symbol definitions
% for structural mechanics
%
% It can be used independently if only
% symbols are necessary or bundled in
% stmglossaries.sty
%
% Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
%                       Initial draft
%
% Contact:   Martin Raedel,  martin.raedel@dlr.de
%            DLR Lightweight Systems
%
%                                 __/|__
%                                /_/_/_/
%            www.dlr.de/sy/en      |/ DLR
%
% Copyright (C) 2019-... DLR Lightweight Systems
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Usage                              %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%
% Symbols-Glossary
%
% Compilation:
%
%   %S - main tex source file name
%
% without any helpers:
%
```

```
%   pdflatex %S.tex
%   makeindex -s %S.ist -t %S.slg1 -o %S.syi1 %S.syg1
%   makeindex -s %S.ist -t %S.slg2 -o %S.syi2 %S.syg2
%   ...
%   pdflatex %S.tex
%   pdflatex %S.tex
%
% with perl interpreter installation
%
%   pdflatex %S.tex
%   makeglossaries %S
%   pdflatex %S
%   pdflatex %S
%
% with LuaLaTeX
%
%   makeglossaries-lite doc
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Requirements                      %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% Declare that this style file requires at least LaTeX version 2e.
\NeedsTeXFormat{LaTeX2e}

% Provide the name of your page, the date it was last updated, and a
    comment about what it's used for
\ProvidesPackage{stmglossariesbase}[2023/02/12 STMs custom LaTeX base
    glossaries definitions]

% If not loaded in advance, load the glossaries package with some default
     options
\@ifpackageloaded{glossaries}{}{%
  \RequirePackage[%
    acronym,   % create a list of acronyms
    %nomain,    % do not use the main glossary
    toc,       % add glossary titles to table of contents
  ]{glossaries}[=v4.49]%
}%

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% That's it                         %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

```
\endinput
```

D.3. stmglossariesacronyms.sty

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Header                             %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%
% This file includes the common LaTeX
% acronyms definitions
% for structural mechanics
% Based upon the glossaries package:
%   https://ctan.org/pkg/glossaries
%
% Usage
%  - Preamble:
%    - \usepackage{stmglossariesacronyms}
%    - \makeglossaries
%  - Document: e.g. (Adapt to your type of glossary item)
%    - \printglossary[type=\acronymtype] or
%    - \printglossary[type=\acronymtype,nonumberlist]
%  - Compilation: e.g. (Adapt to your type of glossary item)
%    - makeindex -s [MYTEXFILENAME].ist -o [MYTEXFILENAME].acr [
    MYTEXFILENAME].acn
%
% Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
%                       Initial draft
%
% Contact:   Martin Raedel,  martin.raedel@dlr.de
%            DLR Lightweight Systems
%
%                                __/|__
%                               /_/_/_/
%            www.dlr.de/sy/en     |/ DLR
%
% Copyright (C) 2019-... DLR Lightweight Systems
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Content                            %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% Declare that this style file requires at least LaTeX version 2e.
\NeedsTeXFormat{LaTeX2e}

```

```
% Provide the name of your page, the date it was last updated, and a comment about what it's used for
\ProvidesPackage{stmglossariesacronyms}[2023/02/12 STMs custom LaTeX acronym definitions]

% If not loaded in advance, load the glossaries package with some default options
\@ifpackageloaded{stmglossariesbase}{}{\RequirePackage{stmglossariesbase}}%

% ---------------------------
% Options
% ---------------------------

% For options
\@ifpackageloaded{kvoptions}{}{\RequirePackage{kvoptions}}%

\SetupKeyvalOptions{%
  family=stmglossariesacronyms,%
  prefix=stmglossariesacronyms@,%
  setkeys=\kvsetkeys,%
}

% Load styles
\DeclareBoolOption[true]{commands}

% Load styles
\DeclareBoolOption[true]{items}

% Load styles
\DeclareBoolOption[true]{styles}

% Automatically add the corresponding glossary entry to the acronym
\DeclareBoolOption[false]{autoaddglossaryentry}

% Add a link from the acronym to the glossary entry
\DeclareBoolOption[false]{linktoglossary}

% Process options
\ProcessKeyvalOptions{stmglossariesacronyms}

% ---------------------------
% Modules
% ---------------------------
```

```
80
81 % Load the items
82 \ifstmglossariesacronyms@items%
83   \@ifpackageloaded{stmglossariesacronymsitems}{}{%
84     \RequirePackage[%
85       autoaddglossaryentry={\ifstmglossariesacronyms@autoaddglossaryentry
     true\else false\fi},%
86       linktoglossary={\ifstmglossariesacronyms@linktoglossary true\else
    false\fi},%
87     ]{stmglossariesacronymsitems}%
88   }%
89 \fi%
90
91 % Load the styles
92 \ifstmglossariesacronyms@styles
93   \@ifpackageloaded{stmglossariesacronymsstyles}{}{\RequirePackage{
     stmglossariesacronymsstyles}}
94 \fi
95
96 % Load the print commands
97 \ifstmglossariesacronyms@commands%
98   \@ifpackageloaded{stmglossariesacronymscommands}{}{%
99     \RequirePackage{stmglossariesacronymscommands}%
100  }%
101 \fi
102
103 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
104 % That's it                          %
105 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
106
107 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
     this file. LaTeX will ignore anything after this line.
108 \endinput
```

D.4. stmglossariesacronymscommands.sty

```
1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 % Header                            %
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %
5 % This file includes the common command shortcuts
6 % for acronyms and glossaries
7 % for structural mechanics
8 %
```

```
% It can be used independently if only
% symbols are necessary or bundled in
% stmglossaries.sty
%
% Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
%                       Initial draft
%
% Contact:   Martin Raedel,  martin.raedel@dlr.de
%            DLR Lightweight Systems
%
%                                 __/|__
%                                /_/_/_/
%            www.dlr.de/sy/en      |/ DLR
%
% Copyright (C) 2019-... DLR Lightweight Systems
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Content                            %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% Declare that this style file requires at least LaTeX version 2e.
\NeedsTeXFormat{LaTeX2e}

% Provide the name of your page, the date it was last updated, and a
    comment about what it's used for
\ProvidesPackage{stmglossariesacronymscommands}[2023/02/12 STMs custom
    LaTeX acronym commands]

% ---------------------------
% Commands
% ---------------------------

\newcommand{\printstmacronyms}        {\printglossary[type=\acronymtype,
    style=stmacronymstyle ,nonumberlist]}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% That's it                          %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\endinput
```

D.5. stmglossariesacronymsstyles.sty

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
2  % Header                                %
3  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4  %
5  % This file includes the common LaTeX
6  % acronym style definitions
7  % (acronyms, glossaries, symbols)
8  % for structural mechanics
9  %
10 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
11 %                        Initial draft
12 %
13 % Contact:   Martin Raedel,  martin.raedel@dlr.de
14 %            DLR Lightweight Systems
15 %
16 %                                  __/|__
17 %                                 /_/_/_/
18 %            www.dlr.de/sy/en       |/ DLR
19 %
20 % Copyright (C) 2019-... DLR Lightweight Systems
21 %
22 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
23 % Content                               %
24 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
25
26 % Declare that this style file requires at least LaTeX version 2e.
27 \NeedsTeXFormat{LaTeX2e}
28
29 % Provide the name of your page, the date it was last updated, and a
       comment about what it's used for
30 \ProvidesPackage{stmglossariesacronymsstyles}[2023/02/12 STMs custom
       LaTeX acronyms style definitions]
31
32 % If not loaded in advance, load the glossaries package with some default
        options
33 \@ifpackageloaded{stmglossariesbase}{}{\RequirePackage{stmglossariesbase
       }}%
34
35 %
36 \@ifpackageloaded{xltabular}{}{\RequirePackage{xltabular}}
37
38 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
39 % Functionality                         %
40 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
41
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Redefine package options          %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%Den Punkt am Ende jeder Beschreibung deaktivieren
\renewcommand*{\glspostdescription}{}
% \renewcommand*{\glspostdescription}{\dotfill}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Own styles                        %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% -----------------
% Acronym-styles
% -----------------

\newglossarystyle{stmacronymstyle}{%
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{lX}}%
    {\endxltabular}%
  % Header line
  \renewcommand*{\glossaryheader}{%
    %\textbf{Label} & \textbf{Symbol}
    \tabularnewline%
    \tabularnewline%
  }%
  % indicate what to do at the start of each logical group
  %\renewcommand*{\glsgroupheading}[1]{}%
  %\renewcommand*{\glsgroupskip}{}% What to do between groups
  \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
  \renewcommand*{\glossaryentryfield}[5]{%
    \glsentryitem{##1}\glstarget{##1}{##2}
      & ##3\glspostdescription ##5% Description
    \tabularnewline%
  }
}

\newglossarystyle{stmacronymnogroupskipstyle}{%
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{lX}}%
    {\endxltabular}%
  % Header line
  \renewcommand*{\glossaryheader}{%
```

```
    %\textbf{Label} & \textbf{Symbol}
    \tabularnewline%
    \tabularnewline%
  }%
  % indicate what to do at the start of each logical group
  %\renewcommand*{\glsgroupheading}[1]{}%
  %\renewcommand*{\glsgroupskip}{}% What to do between groups
  \renewcommand*{\glsgroupskip}{}% What to do between groups
  \renewcommand*{\glossaryentryfield}[5]{%
    \glsentryitem{##1}\glstarget{##1}{##2}
      & ##3\glspostdescription ##5% Description
    \tabularnewline%
  }
}

% Style for usage in papers with:
% - header line: no
% - initial empty lines: none
% - group heading: none
% - group skip: no
% - columns: 1
% - indent of first column: no
\newglossarystyle{stmacronympaperstyle}{%
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{@{}lX}}%
    {\endxltabular}%
  % Header line
  \renewcommand*{\glossaryheader}{%
    %\textbf{Label} & \textbf{Symbol}
    %\tabularnewline%
  }%
  % indicate what to do at the start of each logical group
  %\renewcommand*{\glsgroupheading}[1]{}%
  \renewcommand*{\glsgroupskip}{}% What to do between groups
  \renewcommand*{\glossaryentryfield}[5]{%
    \glsentryitem{##1}\glstarget{##1}{##2}
      & ##3\glspostdescription ##5% Description
    \tabularnewline%
  }
}

% -----------------
% Style to show the keys
% -----------------
```

```
129
130 \newglossarystyle{stmacronymlabelstyle}{%
131   \renewenvironment{theglossary}%
132     {\xltabular[l]{\linewidth}{lcX}}%
133     {\endxltabular}%
134   % Header line
135   \renewcommand*{\glossaryheader}{%
136     \textbf{Label} & \textbf{Acronym} & \textbf{Description}
137     \tabularnewline%
138     \tabularnewline%
139   }%
140   % indicate what to do at the start of each logical group
141   %\renewcommand*{\glsgroupheading}[1]{}%
142   %\renewcommand*{\glsgroupskip}{}% What to do between groups
143   \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
      groups
144   \renewcommand*{\glossaryentryfield}[5]{%
145     \glsentrycounterlabel{##1} &%
146     \glsentryitem{##1}\glstarget{##1}{##2}&%
147     ##3\glspostdescription ##5% Description
148     \tabularnewline%
149   }
150 }
151
152 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
153 % That's it                          %
154 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
155
156 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
      this file. LaTeX will ignore anything after this line.
157 \endinput
```

D.6. stmglossariesglossary.sty

```
1  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2  % Header                            %
3  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4  %
5  % This file includes the common LaTeX
6  % glossary definitions
7  % for structural mechanics
8  % Based upon the glossaries package:
9  %   https://ctan.org/pkg/glossaries
10 %
```

```
% Usage
%  - Preamble:
%    - \usepackage{stmglossariesglossary}
%    - \makeglossaries
%  - Document: e.g. (Adapt to your type of glossary item)
%    - \printglossary[type=main] or
%    - \printglossary[type=main,nonumberlist]
%  - Compilation: e.g. (Adapt to your type of glossary item)
%    - makeindex -s [MYTEXFILENAME].ist -o [MYTEXFILENAME].acr [MYTEXFILENAME].acn
%
% Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
%                       Initial draft
%
% Contact:   Martin Raedel,  martin.raedel@dlr.de
%            DLR Lightweight Systems
%
%                                 __/|__
%                                /_/_/_/
%            www.dlr.de/sy/en      |/ DLR
%
% Copyright (C) 2019-... DLR Lightweight Systems
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Content                            %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% Declare that this style file requires at least LaTeX version 2e.
\NeedsTeXFormat{LaTeX2e}

% Provide the name of your page, the date it was last updated, and a comment about what it's used for
\ProvidesPackage{stmglossariesglossary}[2023/02/12 STMs custom LaTeX glossary definitions]

% If not loaded in advance, load the glossaries package with some default options
\@ifpackageloaded{stmglossariesbase}{}{\RequirePackage{stmglossariesbase}}%

% ---------------------------
% Options
% ---------------------------

```

```
% For options
\@ifpackageloaded{kvoptions}{}{\RequirePackage{kvoptions}}%

% Option family
\SetupKeyvalOptions{%
  family=stmglossariesglossary,%
  prefix=stmglossariesglossary@,%
  setkeys=\kvsetkeys,%
}

% Load styles
\DeclareBoolOption[true]{commands}

% Load styles
\DeclareBoolOption[true]{items}

% Load styles
\DeclareBoolOption[true]{styles}

% Process options
\ProcessKeyvalOptions{stmglossariesglossary}

% ----------------------------
% Modules
% ----------------------------

% Load the items
\ifstmglossariesglossary@items
  \@ifpackageloaded{stmglossariesglossaryitems}{}{\RequirePackage{
    stmglossariesglossaryitems}}
\fi

% Load the styles
\ifstmglossariesglossary@styles
  \@ifpackageloaded{stmglossariesglossarystyles}{}{\RequirePackage{
    stmglossariesglossarystyles}}
\fi

% Load the print commands
\ifstmglossariesglossary@commands%
  \@ifpackageloaded{stmglossariesglossarycommands}{}{%
    \RequirePackage{stmglossariesglossarycommands}%
  }%
\fi
```

```
92
93 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
94 % That's it                         %
95 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
96
97 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
       this file. LaTeX will ignore anything after this line.
98 \endinput
```

D.7. stmglossariesglossarycommands.sty

```
1  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2  % Header                           %
3  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4  %
5  % This file includes the common command shortcuts
6  % for acronyms and glossaries
7  % for structural mechanics
8  %
9  % It can be used independently if only
10 % symbols are necessary or bundled in
11 % stmglossaries.sty
12 %
13 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
14 %                       Initial draft
15 %
16 % Contact:   Martin Raedel,  martin.raedel@dlr.de
17 %            DLR Lightweight Systems
18 %
19 %                                __/|__
20 %                               /_/_/_/
21 %            www.dlr.de/sy/en     |/ DLR
22 %
23 % Copyright (C) 2019-... DLR Lightweight Systems
24 %
25 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
26 % Content                          %
27 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
28
29 % Declare that this style file requires at least LaTeX version 2e.
30 \NeedsTeXFormat{LaTeX2e}
31
32 % Provide the name of your page, the date it was last updated, and a
       comment about what it's used for
```

```
33 \ProvidesPackage{stmglossariesglossarycommands}[2023/02/12 STMs custom
       LaTeX glossary commands]
34
35 % ---------------------------
36 % Commands
37 % ---------------------------
38
39 \newcommand{\printstmglossary}        {\printglossary[type=main,style=
       stmglossarystyle ,nonumberlist]}
40
41 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
42 % That's it                        %
43 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
44
45 \endinput
```

D.8. stmglossariesglossarystyles.sty

```
1  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2  % Header                          %
3  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4  %
5  % This file includes the common LaTeX
6  % glossary style definitions
7  % (glossary, glossaries, symbols)
8  % for structural mechanics
9  %
10 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
11 %                       Initial draft
12 %
13 % Contact:   Martin Raedel,  martin.raedel@dlr.de
14 %            DLR Lightweight Systems
15 %
16 %                                __/|__
17 %                               /_/_/_/
18 %            www.dlr.de/sy/en     |/ DLR
19 %
20 % Copyright (C) 2019-... DLR Lightweight Systems
21 %
22 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
23 % Content                         %
24 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
25
26 % Declare that this style file requires at least LaTeX version 2e.
```

```
\NeedsTeXFormat{LaTeX2e}

% Provide the name of your page, the date it was last updated, and a comment about what it's used for
\ProvidesPackage{stmglossariesglossarystyles}[2023/02/12 STMs custom LaTeX glossary style definitions]

% If not loaded in advance, load the glossaries package with some default options
\@ifpackageloaded{stmglossariesbase}{}{\RequirePackage{stmglossariesbase}}%

%
\@ifpackageloaded{xltabular}{}{\RequirePackage{xltabular}}

%
\@ifpackageloaded{stmbibliography}{}{\RequirePackage{stmbibliography}}%
\addbibresource{stmglossariesglossarysources.bib}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Functionality                     %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Redefine package options          %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%Den Punkt am Ende jeder Beschreibung deaktivieren
\renewcommand*{\glspostdescription}{}
% \renewcommand*{\glspostdescription}{\dotfill}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Own styles                        %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% -----------------
% glossary-styles
% -----------------

\newglossarystyle{stmglossarystyle}{%
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{lX}}%
    {\endxltabular}%
  % Header line
```

```
  \renewcommand*{\glossaryheader}{%
    %\textbf{Entry} & \textbf{Symbol}
    \tabularnewline%
    \tabularnewline%
    %\endhead%
    %\endfoot%
  }%
  % indicate what to do at the start of each logical group
  %\renewcommand*{\glsgroupheading}[1]{}% Group heading
  \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
  \renewcommand*{\glossaryentryfield}[5]{%
    \glsentryitem{##1}\glstarget{##1}{##2}
      & ##3\glspostdescription ##5% Description
    \tabularnewline%
  }
}

% -----------------
% Style to show entries with sources
% -----------------

\newglossarystyle{stmglossarysourcestyle}{%
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{lXc}}%
    {\endxltabular}%
  % Header line
  \renewcommand*{\glossaryheader}{%
    %\textbf{Entry} & \textbf{Symbol} & \textbf{Sources}
    \tabularnewline%
    \tabularnewline%
    %\endhead%
    %\endfoot%
  }%
  % indicate what to do at the start of each logical group
  %\renewcommand*{\glsgroupheading}[1]{}% Group heading
  \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
  \renewcommand*{\glossaryentryfield}[5]{%
    \glsentryitem{##1}\glstarget{##1}{##2} &%
                ##3\glspostdescription ##5 &%
    \tabularnewline%
                \ifglshasfield{useri}{##1}{\space%
      % in the event of multiple cites, \glsentryuseri{##1} needs to be
```

```
    expanded before being passed to \cite.
      \glsletentryfield{\thiscite}{##1}{useri}%
      \expandafter\cite\expandafter{\thiscite}%
                }{}%
  }
}

% -----------------
% Style to show the keys
% -----------------

\newglossarystyle{stmglossarylabelstyle}{%
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{lcX}}%
    {\endxltabular}%
  % Header line
  \renewcommand*{\glossaryheader}{%
    \textbf{Label} & \textbf{Entry} & \textbf{Description}
    \tabularnewline%
    \tabularnewline%
    %\endhead%
    %\endfoot%
  }%
  % indicate what to do at the start of each logical group
  %\renewcommand*{\glsgroupheading}[1]{}%
  %\renewcommand*{\glsgroupskip}{}% What to do between groups
  \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
  \renewcommand*{\glossaryentryfield}[5]{%
    \glsentrycounterlabel{##1} &%
    \glsentryitem{##1}\glstarget{##1}{##2}&%
    ##3\glspostdescription ##5% Description
    \tabularnewline%
  }
}

% -----------------
% Style to show the keys with sources
% -----------------

\newglossarystyle{stmglossarylabelsourcestyle}{%
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{lcXc}}%
    {\endxltabular}%
```

```
  % Header line
  \renewcommand*{\glossaryheader}{%
    \textbf{Label} & \textbf{Entry} & \textbf{Description} & \textbf{
    Sources}
    \tabularnewline%
    \tabularnewline%
    %\endhead%
    %\endfoot%
  }%
  % indicate what to do at the start of each logical group
  %\renewcommand*{\glsgroupheading}[1]{}%
  %\renewcommand*{\glsgroupskip}{}% What to do between groups
  \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
  \renewcommand*{\glossaryentryfield}[5]{%
    \glsentrycounterlabel{##1} &%
    \glsentryitem{##1}\glstarget{##1}{##2}&%
    ##3\glspostdescription ##5&%
                \ifglshasfield{useri}{##1}{\space%
      % in the event of multiple cites, \glsentryuseri{##1} needs to be
    expanded before being passed to \cite.
      \glsletentryfield{\thiscite}{##1}{useri}%
      \expandafter\cite\expandafter{\thiscite}
                }{}%
    %\space ##2%
    \tabularnewline%
  }
}

% -----------------
% Style to show the keys with sources and the content in a new line
% -----------------

\newglossarystyle{stmglossarylabelsourcestyle2}{%
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{lcc}}%
    {\endxltabular}%
  % Header line
  \renewcommand*{\glossaryheader}{%
    \textbf{Label} & \textbf{Entry} & \textbf{Sources}
    \tabularnewline%
    \tabularnewline%
    %\endhead%
    %\endfoot%
```

```
  }%
  % indicate what to do at the start of each logical group
  %\renewcommand*{\glsgroupheading}[1]{}%
  %\renewcommand*{\glsgroupskip}{}% What to do between groups
  \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
  \renewcommand*{\glossaryentryfield}[5]{%
    \glsentrycounterlabel{##1} &%
    \glsentryitem{##1}\glstarget{##1}{##2}&%
    %##3\glspostdescription ##5&%
                \ifglshasfield{useri}{##1}{\space%
      % in the event of multiple cites, \glsentryuseri{##1} needs to be
    expanded before being passed to \cite.
      \glsletentryfield{\thiscite}{##1}{useri}%
      \expandafter\cite\expandafter{\thiscite}
                }{}%
    %\space ##2%
    \tabularnewline%
    \multicolumn{3}{X}{##3\glspostdescription ##5}
    \tabularnewline%
    \tabularnewline%
  }
}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% That's it                          %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% Finally, we'll use \endinput to indicate that LaTeX can stop reading
    this file. LaTeX will ignore anything after this line.
\endinput
```

D.9. stmglossariessymbols.sty

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Header                             %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%
% This file includes the common LaTeX
% symbols definitions
% (acronyms, glossaries, symbols)
% for structural mechanics
% Based upon the glossaries package:
%   https://ctan.org/pkg/glossaries
```

```
11 %
12 % Usage
13 %  - Preamble:
14 %    - \usepackage{stmglossaries}
15 %    - \makeglossaries
16 %  - Document: e.g. (Adapt to your type of glossary item)
17 %    - \printglossary[type=\acronymtype] or
18 %    - \printglossary[type=\acronymtype,nonumberlist]
19 %  - Compilation: e.g. (Adapt to your type of glossary item)
20 %    - makeindex -s [MYTEXFILENAME].ist -o [MYTEXFILENAME].acr [
       MYTEXFILENAME].acn
21 %
22 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
23 %                       Initial draft
24 %
25 % Contact:   Martin Raedel,  martin.raedel@dlr.de
26 %            DLR Lightweight Systems
27 %
28 %                                 __/|__
29 %                                /_/_/_/
30 %            www.dlr.de/sy/en      |/ DLR
31 %
32 % Copyright (C) 2019-... DLR Lightweight Systems
33 %
34 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
35 % Content                             %
36 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
37
38 % Declare that this style file requires at least LaTeX version 2e.
39 \NeedsTeXFormat{LaTeX2e}
40
41 % Provide the name of your page, the date it was last updated, and a
       comment about what it's used for
42 \ProvidesPackage{stmglossariessymbols}[2023/02/12 STMs custom LaTeX
       symbol definitions]
43
44 % If not loaded in advance, load the glossaries package with some default
        options
45 \@ifpackageloaded{stmglossariesbase}{}{\RequirePackage{stmglossariesbase
       }}%
46
47 % ----------------------------
48 % Options
49 % ----------------------------
```

```
50
51 % For options
52 \@ifpackageloaded{kvoptions}{}{\RequirePackage{kvoptions}}%
53
54 % Option family
55 \SetupKeyvalOptions{%
56   family=stmglossariessymbols,%
57   prefix=stmglossariessymbols@,%
58   setkeys=\kvsetkeys,%
59 }
60
61 % Load commands
62 \DeclareBoolOption[true]{commands}
63
64 % Load styles
65 \DeclareBoolOption[true]{items}
66
67 % Load styles
68 \DeclareBoolOption[true]{styles}
69
70 % Process options
71 \ProcessKeyvalOptions{stmglossariessymbols}
72
73 % ----------------------------
74 % Modules
75 % ----------------------------
76
77 % Load the items
78 \ifstmglossariessymbols@items
79   \@ifpackageloaded{stmglossariessymbolsitems}{}{\RequirePackage{
     stmglossariessymbolsitems}}
80 \fi
81
82 % Load the styles
83 \ifstmglossariessymbols@styles
84   \@ifpackageloaded{stmglossariessymbolsstyles}{}{\RequirePackage{
     stmglossariessymbolsstyles}}
85 \fi
86
87 % Load the commands
88 \ifstmglossariessymbols@commands
89   \@ifpackageloaded{stmglossariessymbolscommands}{}{\RequirePackage{
     stmglossariessymbolscommands}}
90 \fi
```

```
91
92 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
93 % That's it                           %
94 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
95
96 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
       this file. LaTeX will ignore anything after this line.
97 \endinput
```

D.10. stmglossariessymbolscommands.sty

```
1  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2  % Header                             %
3  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4  %
5  % This file includes the common LaTeX
6  % symbol commands definitions
7  % for structural mechanics
8  %
9  % It can be used independently if only
10 % symbols are necessary or bundled in
11 % stmglossaries.sty
12 %
13 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
14 %                       Initial draft
15 %
16 % Contact:   Martin Raedel,  martin.raedel@dlr.de
17 %            DLR Lightweight Systems
18 %
19 %                                __/|__
20 %                               /_/_/_/
21 %            www.dlr.de/sy/en     |/ DLR
22 %
23 % Copyright (C) 2019-... DLR Lightweight Systems
24 %
25 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
26 % Usage                              %
27 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
28
29 % Declare that this style file requires at least LaTeX version 2e.
30 \NeedsTeXFormat{LaTeX2e}
31
32 % Provide the name of your page, the date it was last updated, and a
       comment about what it's used for
```

```
33 \ProvidesPackage{stmglossariessymbolscommands}[2023/02/12 STMs custom
       LaTeX symbol command definitions]
34
35 %
36 \@ifpackageloaded{stmglossariessymbolsitems}{}{\RequirePackage{
       stmglossariessymbolsitems}}%
37
38 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
39 % Commands                           %
40 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
41
42 % --------------------------
43 % Shortcuts
44 % --------------------------
45
46 \newcommand{\csyslocal}[1]{%
47   %The symbol
48   \ensuremath{\hat{#1}}%
49   %Add the operator to the list
50   \glsadd{sym:operator:csys:local}%
51 }
52
53 \newcommand{\csysmaterial}[1]{%
54   %The symbol
55   \ensuremath{\bar{#1}}%
56   %Add the operator to the list
57   \glsadd{sym:operator:csys:material}%
58 }
59
60 \newcommand{\difference}[1]{%
61   %The symbol
62   \ensuremath{\glssymbol{sym:operator:Delta}#1}%
63 }
64
65 \newcommand{\derivative}[1]{%
66   %The symbol
67   \ensuremath{\glssymbol{sym:operator:dif}#1}%
68   %Add the operator to the list
69   \glsadd{sym:operator:dif}%
70 }
71
72 \newcommand{\timederivativeshort}[1]{%
73   %The symbol
74   \ensuremath{\dot{#1}}%
```

```
  %Add the operator to the list
  \glsadd{sym:operator:dif:short:time}%
}

\newcommand{\timederivativeshorttwo}[1]{%
  %The symbol
  \ensuremath{\ddot{#1}}%
  %Add the operator to the list
  \glsadd{sym:operator:dif:short:time:2}%
}

\newcommand{\mean}[1]{%
  %The symbol
  \ensuremath{\overline{#1}}%
  %Add the operator to the list
  \glsadd{sym:operator:mean}%
}

\newcommand{\norm}[1]{%
  %The symbol
  \ensuremath{\glssymbol{sym:operator:norm:left}#1\glssymbol{sym:operator
    :norm:right}}%
  %Add the operator to the list
  \glsadd{sym:operator:norm}%
}

\newcommand{\transpose}[1]{%
  \ensuremath{#1^{\glssymbol{sym:operator:matrix:transpose}}}%
}

\newcommand{\inverse}[1]{%
  \ensuremath{#1^{\glssymbol{sym:operator:matrix:inverse}}}%
}

\newcommand{\partialderivativeshort}[2]{%
  %The symbol
  \ensuremath{#1_{,#2}}%
  %Add the operator to the list
  \glsadd{sym:operator:differential:partial:short}%
}

% ---------------------------
% Printing
% ---------------------------
```

```
118
119 \newcommand{\printstmscalarglossary}  {\printglossary[type=scalarlist  ,
        style=stmsymbolstyle  ,nonumberlist]}
120 \newcommand{\printstmvectorglossary}  {\printglossary[type=vectorlist  ,
        style=stmsymbolstyle  ,nonumberlist]}
121 \newcommand{\printstmmatrixglossary}  {\printglossary[type=matrixlist  ,
        style=stmsymbolstyle  ,nonumberlist]}
122 \newcommand{\printstmstateglossary}   {\printglossary[type=statelist   ,
        style=stmsymbolstyle  ,nonumberlist]}
123 \newcommand{\printstmindexglossary}   {\printglossary[type=indexlist   ,
        style=stmsymbolstyle  ,nonumberlist]}
124 \newcommand{\printstmexponentglossary}{\printglossary[type=exponentlist,
        style=stmsymbolstyle  ,nonumberlist]}
125 \newcommand{\printstmoperatorglossary}{\printglossary[type=operatorlist,
        style=stmoperatorstyle,nonumberlist]}
126
127 \newcommand{\printallstmsymbols}{%
128   \printstmscalarglossary%
129   \printstmvectorglossary%
130   \printstmmatrixglossary%
131   \printstmstateglossary%
132   \printstmindexglossary%
133   \printstmexponentglossary%
134   \printstmoperatorglossary%
135 }
136
137 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
138 % That's it                          %
139 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
140
141 \endinput
```

D.11. stmglossariessymbolstyles.sty

```
1  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2  % Header                            %
3  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4  %
5  % This file includes the common LaTeX
6  % glossaries style definitions
7  % (acronyms, glossaries, symbols)
8  % for structural mechanics
9  %
10 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
```

```
%                       Initial draft
%
% Contact:   Martin Raedel,  martin.raedel@dlr.de
%            DLR Lightweight Systems
%
%                                 __/|__
%                                /_/_/_/
%            www.dlr.de/sy/en      |/ DLR
%
% Copyright (C) 2019-... DLR Lightweight Systems
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Content                           %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% Declare that this style file requires at least LaTeX version 2e.
\NeedsTeXFormat{LaTeX2e}

% Provide the name of your page, the date it was last updated, and a
    comment about what it's used for
\ProvidesPackage{stmglossariessymbolsstyles}[2023/02/12 STMs custom LaTeX
     glossaries style definitions]

% Now paste your code from the preamble here

% If not loaded in advance, load the glossaries package with some default
     options
\@ifpackageloaded{stmglossariesbase}{}{\RequirePackage{stmglossariesbase
    }}%

%
\@ifpackageloaded{xltabular}{}{\RequirePackage{xltabular}}
\@ifpackageloaded{multicol}{}{\RequirePackage{multicol}}%

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Functionality                     %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Redefine package options          %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%Den Punkt am Ende jeder Beschreibung deaktivieren
\renewcommand*{\glspostdescription}{}
```

```
% \renewcommand*{\glspostdescription}{\dotfill}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% Own styles                       %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% -----------------
% Coordinate-system style
% -----------------

%\newglossarystyle{mycoordinatesystemstyle}{%
%  %\renewcommand{\glossarysection}[2][]{}% no title
%  \renewcommand*{\glsclearpage}{}% avoid page break before glossary
%  \renewenvironment{theglossary}%
%    {\begin{longtabu} to \linewidth {cX}}%
%    {\end{longtabu}}%
%  % Header line
%  \renewcommand*{\glossaryheader}{%
%    % Requires booktabs
%    %\toprule%
%    \textbf{Symbol} & \textbf{Description}%
%    \tabularnewline%
%    \tabularnewline%
%    %\midrule%
%    \endhead%
%    %\bottomrule%
%    \endfoot%
%  }%
%  % indicate what to do at the start of each logical group
%  %\renewcommand*{\glsgroupheading}[1]{}%
%  %\renewcommand*{\glsgroupskip}{}% What to do between groups
%  \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
%  \renewcommand*{\glossentry}[1]{%
%    \glsentryitem{##1}% Entry number if required
%    \glstarget{##1}{\glossentrysymbol{##1}} &
%    %\glossentrysymbol{##1}    & % Symbol
%    %\glossentryname{##1}      & % Name
%    \glossentrydesc{##1}       %& % Description
%    %\glsentryuseri{##1}%        % Unit in User1-Variable
%    \tabularnewline%
%  }%
%}

```

```
% -----------------
% Symbols-styles
% -----------------

\newglossarystyle{stmsymbolstyle}{%
  %\renewcommand{\glossarysection}[2][]{}% no title
  \renewcommand*{\glsclearpage}{}% avoid page break before glossary
  \renewenvironment{theglossary}%
    %{\begin{longtabu} to \linewidth {clX}}%c}}%
    %{\end{longtabu}}%
    %{\begin{longtblr}{colspec = {clX}, width = \linewidth}}%
    %{\end{longtblr}}%
    {\xltabular[l]{\linewidth}{clX}}%
    {\endxltabular}%
    %{\begin{tabular}{cllc}}%
    %{\end{tabular}}%
  % Header line
  \renewcommand*{\glossaryheader}{%
    \textbf{Symbol} & \textbf{Name} & \textbf{Description}%
    \tabularnewline%
    \tabularnewline%
    %\\%
    %\\%
    %\endhead%
    %\endfoot%
  }%
  % What to do between groups
  \renewcommand*{\glsgroupskip}{\tabularnewline}
  % How the entry looks like
  \renewcommand*{\glossentry}[1]{%
    \glsentryitem{##1}% Entry number if required
    \glstarget{##1}{\glossentrysymbol{##1}} &
    %\glossentrysymbol{##1}     &% Symbol
    \glossentryname{##1} &% Name
    \glossentrydesc{##1}%&% Description
    %\glsentryuseri{##1}%         % Unit in User1-Variable
    \tabularnewline%
  }%
}

% -----------------
% Symbols-styles for papers
  % -----------------

```

```
  \newglossarystyle{stmonecolpapersymbolstyle}{%
    %\renewcommand{\glossarysection}[2][]{}% no title
    \renewcommand*{\glsclearpage}{}% avoid page break before glossary
    \renewenvironment{theglossary}%
      %{\begin{longtabu} to \linewidth {clXcl}}%c}}%
      %{\end{longtabu}}%
      {\xltabular[l]{\linewidth}{clXcl}}%
      {\endxltabular}%
    % Header line
    \renewcommand*{\glossaryheader}{}%
    % indicate what to do at the start of each logical group
    %\renewcommand*{\glsgroupheading}[1]{}
    % What to do between groups -> no skip
    \renewcommand*{\glsgroupskip}{}
    % How the entry looks like
    \renewcommand*{\glossentry}[1]{
      \glsentryitem{##1}% Entry number if required
      \glstarget{##1}{\glossentrysymbol{##1}} & % Symbol
      \glossentryname{##1}        %& % Name
      \tabularnewline%
    }%
  }

% https://tex.stackexchange.com/a/216434/44634
% needs: \usepackage{multicol}
\newglossarystyle{stmtwocolpapersymbolstyle}{%
  %\renewcommand{\glossarysection}[2][]{}% no title
  \renewenvironment{theglossary}%
    {\begin{multicols}{2}\raggedright}
    {\end{multicols}}
  % Header line
  \renewcommand*{\glossaryheader}{}%
  \renewcommand*{\glsgroupheading}[1]{}% indicate what to do at the start
     of each logical group
  \renewcommand*{\glsgroupskip}{}% What to do between groups -> no skip
  \renewcommand*{\glsclearpage}{}% avoid page break before glossary
  % set how each entry should appear:
  \renewcommand*{\glossentry}[2]{
    \noindent\makebox[2.5em][c]{\glstarget{##1}{\glossentrysymbol{##1}}}%
     Symbol
    \glossentryname{##1}% Name
    \newline
  }
}
```

```
180
181 % -----------------
182 % Exponent-styles
183 % -----------------
184
185 \newglossarystyle{stmexponentstyle}{%
186   %\renewcommand{\glossarysection}[2][]{}% no title
187   \renewcommand*{\glsclearpage}{}% avoid page break before glossary
188   \renewenvironment{theglossary}%
189     {\xltabular[l]{\linewidth}{@{\ \ }r@{}lX}}%
190     {\endxltabular}%
191   % Header line
192   \renewcommand*{\glossaryheader}{%
193     \multicolumn{2}{@{}c@{}}{\textbf{Symbol}} & \textbf{Description}%
194     \tabularnewline%
195     \tabularnewline%
196   }%
197   % What to do between groups
198   \renewcommand*{\glsgroupskip}{\tabularnewline}
199   % How the entry looks like
200   \renewcommand*{\glossentry}[1]{%
201     \glsentryitem{##1}% Entry number if required
202     \protect\ensuremath{\protect\left(\protect\phantom{a}\protect\right)}
      &
203     \glstarget{##1}{\protect\ensuremath{\protect\vphantom{a}^{\
    glossentrysymbol{##1}}}} &
204     \glossentrydesc{##1}% Description
205     \tabularnewline%
206   }%
207 }
208
209 % -----------------
210 % Index-styles
211 % -----------------
212
213 \newglossarystyle{stmindexstyle}{%
214   %\renewcommand{\glossarysection}[2][]{}% no title
215   \renewcommand*{\glsclearpage}{}% avoid page break before glossary
216   \renewenvironment{theglossary}%
217     {\xltabular[l]{\linewidth}{@{\ \ }r@{}lX}}%
218     {\endxltabular}%
219   % Header line
220   \renewcommand*{\glossaryheader}{%
221     \multicolumn{2}{@{}c@{}}{\textbf{Symbol}} & \textbf{Description}%
```

```
    \tabularnewline%
    \tabularnewline%
  }%
  % What to do between groups
  \renewcommand*{\glsgroupskip}{\tabularnewline}
  % How the entry looks like
  \renewcommand*{\glossentry}[1]{%
    \glsentryitem{##1}% Entry number if required
    \protect\ensuremath{\protect\left(\protect\phantom{a}\protect\right)}
     &%
    \glstarget{##1}{\protect\ensuremath{\protect\vphantom{a}_{\
    glossentrysymbol{##1}}}} &%
    \glossentrydesc{##1}% Description
    \tabularnewline%
  }%
}

% -----------------
% Operator style
% -----------------

\newglossarystyle{stmoperatorstyle}{%
  %\renewcommand{\glossarysection}[2][]{}% no title
  \renewcommand*{\glsclearpage}{}% avoid page break before glossary
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{@{\ \;}r@{}c@{}lX}}%
    {\endxltabular}%
  % Header line
  \renewcommand*{\glossaryheader}{%
    \multicolumn{3}{@{}c@{}}{\textbf{Symbol}} & \textbf{Description}%
    \tabularnewline%
    \tabularnewline%
  }%
  % What to do between groups
  \renewcommand*{\glsgroupskip}{\tabularnewline}
  % How the entry looks like
  \renewcommand*{\glossentry}[1]{%
    \glsentryitem{##1}% Entry number if required
    \glsentryuseri{##1} &
    \glsentryuserii{##1} &
    \glsentryuseriii{##1} &
    \glossentrydesc{##1}        %& % Description
    \tabularnewline%
  }%
```

```
}

% -----------------
% Style to show the keys
% -----------------

\newglossarystyle{stmsymbollabelstyle}{%
  \renewcommand*{\glsclearpage}{}% avoid page break before glossary
  \renewenvironment{theglossary}%
    {\xltabular[l]{\linewidth}{Xc}}%
    {\endxltabular}%
  % Header line
  \renewcommand*{\glossaryheader}{%
    \textbf{Label} & \textbf{Symbol}
    \tabularnewline%
    \tabularnewline%
  }%
  % What to do between groups
  \renewcommand*{\glsgroupskip}{\tabularnewline}
  % How the entry looks like
  \renewcommand*{\glossentry}[1]{%
    \glsentryitem{##1}% Entry number if required
    \glsentrycounterlabel{##1} &
    \glstarget{##1}{\glossentrysymbol{##1}}% &
    \tabularnewline%
  }%
}

\newglossarystyle{stmoperatorlabelstyle}{%
  \renewcommand*{\glsclearpage}{}% avoid page break before glossary
  \renewenvironment{theglossary}%
    {%
      %\begingroup%
      %\renewcommand{\arraystretch}{1.4}%
      \xltabular[l]{\linewidth}{X@{\ \;}r@{}c@{}l}
    }%
    {%
      \endxltabular%
      %\endgroup
    }%
  % Header line
  \renewcommand*{\glossaryheader}{%
    \textbf{Label} & \multicolumn{3}{@{}c@{}}{\textbf{Symbol}}% & %
    \tabularnewline%
```

```
    \tabularnewline%
  }%
  % What to do between groups
  \renewcommand*{\glsgroupskip}{\tabularnewline}
  % How the entry looks like
  \renewcommand*{\glossentry}[1]{%
    \glsentryitem{##1}% Entry number if required
    \glsentrycounterlabel{##1} &
    \glsentryuseri{##1} &
    \glsentryuserii{##1} &
    \glsentryuseriii{##1}% &
    \tabularnewline%
  }%
}

%\newglossarystyle{stmoperatorlabelstyle}{%
%  %\renewcommand{\glossarysection}[2][]{}% no title
%  % avoid page break before glossary
%  \renewcommand*{\glsclearpage}{}
%  \renewenvironment{theglossary}%
%    {%
%      \begingroup%
%      \renewcommand{\arraystretch}{1.4}%
%      %\begin{longtabu} to \linewidth {X@{\ \;}r@{}c@{}l}
%      \xltabular[l]{\linewidth}{X@{\ \;}r@{}c@{}l}%
%    }%
%    {%
%      %\end{longtabu}
%      \endxltabular%
%      \endgroup
%    }%
%  % Header line
%  \renewcommand*{\glossaryheader}{%
%    \textbf{Label} & \multicolumn{3}{@{}c@{}}{\textbf{Symbol}}% & %
%    \tabularnewline%
%    \tabularnewline%
%    %\endhead%
%    %\endfoot%
%  }%
%  % indicate what to do at the start of each logical group
%  %\renewcommand*{\glsgroupheading}[1]{}%
%  % What to do between groups
%  %\renewcommand*{\glsgroupskip}{}%
%  % What to do between groups
```

```
%  \renewcommand*{\glsgroupskip}{\tabularnewline}
%  \renewcommand*{\glossentry}[1]{%
%    \glsentryitem{##1}% Entry number if required
%    \glsentrycounterlabel{##1} &
%    \glsentryuseri{##1} &
%    \glsentryuserii{##1} &
%    \glsentryuseriii{##1}% &
%    \tabularnewline%
%  }%
%}


%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% That's it                         %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

% Finally, we'll use \endinput to indicate that LaTeX can stop reading
    this file. LaTeX will ignore anything after this line.
\endinput
```