

stmglossaries package description

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For larger documents, such as reports and thesis, it is nice to have L^AT_EX 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 2: Package description

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

<code>\romanscalarsymbol</code>	A roman scalar symbol
<code>\greekscalarsymbol</code>	A greek scalar symbol
<code>\romanvectorsymbol</code>	A roman vector symbol
<code>\greekvectorsymbol</code>	A greek vector symbol
<code>\romanmatrixsymbol</code>	A roman matrix symbol
<code>\scalarstatesymbol</code>	A greek matrix symbol
<code>\romanvectorstatesymbol</code>	A roman vector state symbol
<code>\romandoublestatesymbol</code>	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.

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

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
```

6.3. 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. stmwocolpapersymbolstyle

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

$$\varepsilon_0 \quad (2)$$

Indices

Symbol Description

$$(\)_0 \quad \text{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

$$\varepsilon^e \quad (3)$$

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

$$\nabla \quad (4)$$

Operators

Symbol Description

$\nabla(\)$ Fréchet derivative

References

- [1] *Material Point Method*. 2020. URL: <https://wmcoombs.github.io/mpm/> (visited on 05/15/2020).
- [2] 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:AC	AC	advisory circular
acr:ACARE	ACARE	advisory council for aviation research and innovation in europe
acr:ACO	ACO	ant colony optimisation
acr:AFP	AFP	automated fibre placement
acr:AITM	AITM	Airbus industries test method
acr:ALE	ALE	arbitrary lagrangian-eularian
acr:ALM	ALM	additive layer manufacturing
acr:API	API	application programming interface
acr:APU	APU	auxiliary power unit
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:BLI	BLI	boundary layer ingestion
acr:BOM	BOM	bill of material
acr:BSD	BSD	Berkeley software distribution
acr:BVID	BVID	barely visible impact damage
acr:BVP	BVP	boundary value problem
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: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

Label	Acronym	Description
acr:CE	CE	constraint equation
acr:CEL	CEL	coupled eulerian-lagrangian
acr:CER	CER	composite engineering requirements
acr:CFD	CFD	computational fluid dynamics
acr:CFRP	CFRP	carbon fibre reinforced plastic
acr:CG	CG	centre of gravity
acr:CLA	CLA	contributor license agreement
acr:CLT	CLT	classical laminate theory
acr:CM	CM	continuum mechanic
acr:CME	CME	coefficient of moisture expansion
acr:CSM	CSM	computational structural mechanics
acr:CT	CT	computed tomography
acr:CTE	CTE	coefficient of thermal expansion
acr:CTT	CTT	compact tension test
acr:CZM	CZM	cohesive zone model
acr:DCB	DCB	double cantilever beam
acr:DDMS	DDMS	digital design, manufacturing and services
acr:DELiS	DELiS	design environment for lightweight structures
acr:DFP	DFP	dry fibre placement
acr:DIC	DIC	digital image correlation
acr:DIN	DIN	Deutsches Institut für Normung
acr:DKT	DKT	discrete Kirchhoff theory
acr:DLR	DLR	Deutsches Zentrum für Luft- und Raumfahrt e.V.
acr:DMA	DMA	dynamic mechanical analysis
acr:DOA	DOA	design organization approval
acr:DOE	DOE	design of experiments
acr:DOF	DOF	degree of freedom
acr:DOI	DOI	digital object identifier
acr:DSC	DSC	differential scanning calorimeter
acr:DT	DT	damage tolerance
acr:E2E	E2E	end to end
acr:EA	EA	evolutionary algorithm
acr:EASA	EASA	European Aviation Safety Agency
acr:EFG	EFG	element-free Galerkin
acr:EFGM	EFGM	element-free Galerkin method
acr:ENF	ENF	end-notched flexure
acr:EOS	EOS	equation of state
acr:ERP	ERP	enterprise resource planning
acr:ERR	ERR	energy release rate

Label	Acronym	Description
acr:FAA	FAA	Federal Aviation Administration
acr:FBG	FBG	fibre bragg grating
acr:FDM	FDM	finite difference method
acr:FE	FE	finite element
acr:FEA	FEA	finite element analysis
acr:FEM	FEM	finite element method
acr:FFT	FFT	fast Fourier transform
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:FPF	FPF	first ply failure
acr:FRP	FRP	fiber reinforced plastic
acr:FSDT	FSDT	first-order shear deformation theory
acr:FSI	FSI	fluid-structure interaction
acr:FTE	FTE	full time equivalent
acr:FVC	FVC	fibre volume content
acr:FVM	FVM	finite volume method
acr:GA	GA	genetic algorithm
acr:GFEM	GFEM	global finite element model
acr:GLARE	GLARE	glass laminate aluminum reinforced epoxy
acr:GPL	GPL	GNU General Public License
acr:GUI	GUI	graphical user interface
acr:HSB	HSB	Handbuch Struktur Berechnung
acr:IAB	IAB	industrial advisory board
acr:ICAO	ICAO	international civil aviation organization
acr:IDE	IDE	integrated development environment
acr:IFF	IFF	inter fibre failure
acr:IPO	IPO	input-process-output
acr:ISO	ISO	international organization for standardization
acr:jCoMoT	jCoMoT	Java computational mechanics format translator
acr:jMeS	jMeS	Java mechanics suite
acr:JVM	JVM	Java virtual machine
acr:KPI	KPI	key performance indicator
acr:LCA	LCA	life cycle assessment
acr:LES	LES	large eddy simulation

Label	Acronym	Description
acr:LL	LL	limit load
acr:LPF	LPF	last ply failure
acr:LPS	LPS	linear peridynamic solid
acr:LVI	LVI	low-velocity impact
acr:MAE	MAE	mean absolute error
acr:MBS	MBS	multibody simulation
acr:MBSE	MBSE	model-based systems engineering
acr:MDO	MDO	multi-disciplinary optimization
acr:MES	MES	manufacturing execution system
acr:MMB	MMB	mixed-mode bending
acr:MoC	MoC	means of compliance
acr:MoS	MoS	margin of safety
acr:MPC	MPC	multi-point constraint
acr:MPM	MPM	material point method
acr:MRL	MRL	manufacturing readiness level
acr:MRO	MRO	maintenance, repair and overhaul
acr:NASA	NASA	national aeronautics and space administration
acr:NCF	NCF	non-crimp fabric
acr:NDA	NDA	non-disclosure agreement
acr:NDI	NDI	non-destructive inspection
acr:NSB	NSB	non-ordinary state-based
acr:NSB-PD	NSB-PD	non-ordinary state-based peridynamics
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: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:PD	PD	peridynamic
acr:PDE	PDE	partial differential equation
acr:PDF	PDF	probability density function
acr:PDM	PDM	product data management
acr:PF	PF	progressive failure
acr:PFST	PFST	picture frame shear test
acr:PICM	PICM	particle-in-cell method

Label	Acronym	Description
acr:PLM	PLM	product lifecycle management
acr:PMC	PMC	polymer matrix composite
acr:POJO	POJO	plain old Java object
acr:PSE	PSE	principal structural element
acr:PSO	PSO	particle swarm optimisation
acr:QI	QI	quasi-isotropic
acr:RANS	RANS	Reynolds averaged Navier-Stokes
acr:RF	RF	reserve factor
acr:RMS	RMS	risk mitigation structure
acr:ROM	ROM	reduced order modeling
acr:RRSE	RRSE	root relative squared error
acr:RSE	RSE	relative squared error
acr:RTM	RTM	resin transfer molding
acr:RVE	RVE	representative volume element
acr:SAI	SAI	shear after impact
acr:SB-PD	SB-PD	state-based peridynamics
acr:SC	SC	steering committee
acr:SCM	SCM	supply chain management
acr:SDM	SDM	simulation data management
acr:SEM	SEM	scanning electron microscopy
acr:SERR	SERR	strain energy release rate
acr:SHM	SHM	structural health monitoring
acr:SMT	SMT	shear-moment-torque
acr:SoC	SoC	separation of concerns
acr:SPH	SPH	smoothed particle hydrodynamics
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:TFP	TFP	tailored fibre placement
acr:TGA	TGA	thermo-gravimetric analysis
acr:TMA	TMA	thermo-mechanical analysis
acr:TRL	TRL	technology readiness level
acr:UAV	UAV	unmanned aerial vehicle
acr:UD	UD	unidirectional
acr:UHM	UHM	ultra high modulus

Label	Acronym	Description
acr:UL	UL	ultimate load
acr:VaV	V&V	verification & validation
acr:VARI	VARI	vacuum-assisted resin transfer molding
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:VT	VT	virtual testing
acr:VTOL	VTOL	vertical take-off and landing
acr:WORA	WORA	write once, run anywhere
acr:WP	WP	work package
acr:XFEM	XFEM	extended finite element method

B. All glossary entries

Glossary

Label	Entry	Description	Sources
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:MPM	MPM	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.	[1]
glo:Simulation	Simulation	The ensemble of models - deterministic, load, boundary, material, performance, and uncertainty - that are exercised to produce a simulation outcome.	[2]

C. All symbols

Scalars

Label	Symbol
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:coord:global:x	x
sym:scalar:coord:local:x	\hat{x}
sym:scalar:coord:material:x	1
sym:scalar:coord:global:y	y
sym:scalar:coord:local:y	\hat{y}
sym:scalar:coord:material:y	2
sym:scalar:coord:global:z	z
sym:scalar:coord:local:z	\hat{z}
sym:scalar:coord:material:z	3
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

Label	Symbol
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:coord:natural:y	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	$\omega\xi$
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:coord:natural:x	ξ
sym:scalar:pd:bond:undeformed:component	ξ
sym:scalar:coord:natural:z	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	η
sym:vector:pd:bond:undeformed	ξ
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:laminar:membrane	\mathbf{A}
sym:matrix:laminar:coupling	\mathbf{B}
sym:matrix:mat:stiffness	\mathbf{C}
sym:matrix:mech:tensor:stiffness	\mathbf{K}
sym:matrix:laminar:bending	\mathbf{D}
sym:matrix:mech:strain:green	\mathbf{E}
sym:matrix:mech:gradient:deformation	\mathbf{F}
sym:matrix:laminar:shear	\mathbf{H}
sym:matrix:mech:gradient:displacement	\mathbf{H}
sym:matrix:identity	\mathbf{I}
sym:matrix:interpolationoperator	\mathbf{I}_Γ
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:laminar:ply:stiffness	\mathbf{Q}
sym:matrix:mat:compliance	\mathbf{S}
sym:matrix:mech:stress:piolakirchhoff:second	\mathbf{S}
sym:matrix:transformation	\mathbf{T}

Label

Symbol

States

Label

Symbol

sym:state:scalar:influence
 sym:state:scalar:extension
 sym:state:scalar:force
 sym:state:scalar:position:undeformed
 sym:state:scalar:position:deformed
 sym:state:scalar:stateromannull
 sym:state:vector:force
 sym:state:vector:direction:deformed
 sym:state:vector:position
 sym:state:vector:deformation
 sym:state:vector:stateromannull
 sym:state:double:modulus

$\underline{\omega}$
 \underline{e}
 \underline{t}
 \underline{x}
 \underline{y}
 $\underline{\mathbf{T}}$
 $\underline{\mathbf{M}}$
 $\underline{\mathbf{X}}$
 $\underline{\mathbf{Y}}$
 $\underline{\mathbb{K}}$

Indices

Label

Symbol

sym:index:load:compression
 sym:index:load:compression:long
 sym:index:critical
 sym:index:hardening
 sym:index:mat:damage:mode:I
 sym:index:mat:damage:mode:II
 sym:index:init
 sym:index:load:shear
 sym:index:load:shear:long
 sym:index:load:tension
 sym:index:load:tension:long
 sym:index:xyz
 sym:index:yield
 sym:index:zero

C
 cmp
 C
 H
 I
 II
 init
 S
 shr
 T
 ten
 x, y, z
 y
 0

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	$D()$
sym:operator:differential:Lagrange	$()'$
sym:operator:differential:Leibnitz	$d()$
sym:operator:differential:partial	$\partial()$
sym:operator:divergence	$\text{div}()$
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	$\nabla()$

Label**Symbol**

sym:operator:norm

 $\|(\)\|$

sym:operator:product:tensor

 \otimes

D. The code

D.1. stmglossaries.sty

```
1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 % Header %
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %
5 % This file includes the common LaTeX
6 % glossaries definitions
7 % (acronyms, glossaries, symbols)
8 % for structural mechanics
9 % Based upon the glossaries package:
10 %   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 Composite Structures and Adaptive Systems
27 %
28 %           __/|__
29 %           /_/_/_/
30 %           www.dlr.de/fa/en      | / DLR
31 %
32 % Copyright (C) 2019-... DLR Composite Structures and Adaptive 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{stmglossaries}[2019/11/03 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

```



```

82 \DeclareBoolOption[false]{autoaddglossaryentrytoacronym}
83
84 % Add a link from the acronym to the glossary entry
85 \DeclareBoolOption[false]{linkacronymtoglossary}
86
87 % Process options
88 \ProcessKeyvalOptions{stmnglossaries}
89
90 % -----
91 % Load the base package
92 % -----
93
94 % If not loaded in advance, load the glossaries package with some default
    options
95 \@ifpackageloaded{stmnglossariesbase}{\RequirePackage{stmnglossariesbase
    }}%
96
97 % -----
98 % Modules 1
99 % newglossary can only be used before makeglossaries
100 % -----
101
102 % Load morewrites
103 \@ifpackageloaded{morewrites}{\fi%
104   \ifstmnglossaries@morewrites%
105     \RequirePackage{morewrites}%
106   \fi%
107 }%
108
109 % Load the symbols
110 \ifstmnglossaries@symbols
111   \@ifpackageloaded{stmnglossariessymbols}{\fi%
112     \RequirePackage[%
113       commands={\ifstmnglossaries@commands true\else false\fi},%
114       items={\ifstmnglossaries@items true\else false\fi},%
115       styles={\ifstmnglossaries@styles true\else false\fi},%
116     ]{stmnglossariessymbols}%
117   }%
118 \fi
119
120 % -----
121 % Makeglossaries command
122 % -----
123

```

```

124 \ifstmglossaries@makeglossaries
125   \@ifpackageloaded{etoolbox}{\{%
126     \RequirePackage{etoolbox}
127   }
128
129   % May not be at \AtEndPreamble in case the original implementation of "
130   % see" key in glossaryentry definition is used.
131   \AtEndPreamble{%
132     \makeglossaries%
133   }
134 \fi
135 % -----
136 % Modules 2
137 % -----
138
139 % Load the glossary
140 \ifstmglossaries@glossary
141   \@ifpackageloaded{stmglossariesglossary}{\{%
142     \RequirePackage[%
143       commands={\ifstmglossaries@commands true\else false\fi},%
144       items={\ifstmglossaries@items true\else false\fi},%
145       styles={\ifstmglossaries@styles true\else false\fi},%
146     ]{stmglossariesglossary}%
147   }%
148 \fi
149
150 % Load the acronyms
151 \ifstmglossaries@acronyms
152   \@ifpackageloaded{stmglossariesacronyms}{\{%
153     \RequirePackage[%
154       commands={\ifstmglossaries@commands true\else false\fi},%
155       items={\ifstmglossaries@items true\else false\fi},%
156       styles={\ifstmglossaries@styles true\else false\fi},%
157       autoaddglossaryentry={\
158         ifstmglossaries@autoaddglossaryentrytoacronym true\else false\fi},%
159       linktoglossary={\ifstmglossaries@linkacronymtoglossary true\else
160         false\fi},%
161     ]{stmglossariesacronyms}%
162   }%
163 \fi
164 % That's it

```

```

165 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
166
167 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
    this file. LaTeX will ignore anything after this line.
168 \endinput

```

D.2. stmglossariesbase.sty

```

1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 % Header %
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %
5 % This file includes the common LaTeX
6 % symbol 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 Composite Structures and Adaptive Systems
18 %
19 %
20 %             _ _/|_ _
21 %             / _/_/_/_/
22 %             www.dlr.de/fa/en      | / DLR
23 %
24 % Copyright (C) 2019-... DLR Composite Structures and Adaptive Systems
25 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
26 % Usage %
27 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
28 %
29 % Symbols-Glossary
30 %
31 % Compilation:
32 %
33 %   %S - main tex source file name
34 %
35 % without any helpers:
36 %

```

```

37 %    pdflatex %S.tex
38 %    makeindex -s %S.ist -t %S.slg1 -o %S.syi1 %S.syg1
39 %    makeindex -s %S.ist -t %S.slg2 -o %S.syi2 %S.syg2
40 %    ...
41 %    pdflatex %S.tex
42 %    pdflatex %S.tex
43 %
44 % with perl interpreter installation
45 %
46 %    pdflatex %S.tex
47 %    makeglossaries %S
48 %    pdflatex %S
49 %    pdflatex %S
50 %
51 % with LuaLaTeX
52 %
53 %    makeglossaries-lite doc
54 %
55 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
56 % Requirements %
57 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
58
59 % Declare that this style file requires at least LaTeX version 2e.
60 \NeedsTeXFormat{LaTeX2e}
61
62 % Provide the name of your page, the date it was last updated, and a
63 % comment about what it's used for
64 \ProvidesPackage{stmglossariesbase}[2019/10/27 STMs custom LaTeX base
65 % glossaries definitions]
66
67 % If not loaded in advance, load the glossaries package with some default
68 % options
69 \@ifpackageloaded{glossaries}{%
70 \RequirePackage[%
71   acronym, % create a list of acronyms
72   %nomain, % do not use the main glossary
73   toc, % add glossary titles to table of contents
74 ]{glossaries}%
75 }%
76
77 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
78 % That's it %
79 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

78 \endinput

D.3. stmglossariesacronyms.sty

```
1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 % Header %
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %
5 % This file includes the common LaTeX
6 % acronyms definitions
7 % for structural mechanics
8 % Based upon the glossaries package:
9 %   https://ctan.org/pkg/glossaries
10 %
11 % Usage
12 %   - Preamble:
13 %     - \usepackage{stmglossariesacronyms}
14 %     - \makeglossaries
15 %   - Document: e.g. (Adapt to your type of glossary item)
16 %     - \printglossary[type=\acronymtype] or
17 %     - \printglossary[type=\acronymtype,nonumberlist]
18 %   - Compilation: e.g. (Adapt to your type of glossary item)
19 %     - makeindex -s [MYTEXFILENAME].ist -o [MYTEXFILENAME].acr [
20 %       MYTEXFILENAME].acn
21 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
22 %               Initial draft
23 %
24 % Contact:   Martin Raedel, martin.raedel@dlr.de
25 %            DLR Composite Structures and Adaptive Systems
26 %
27 %            _ _/_/_
28 %            /_/_/_/_
29 %            www.dlr.de/fa/en      |/_ DLR
30 %
31 % Copyright (C) 2019-... DLR Composite Structures and Adaptive Systems
32 %
33 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
34 % Content %
35 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
36
37 % Declare that this style file requires at least LaTeX version 2e.
38 \NeedsTeXFormat{LaTeX2e}
39
```

```

40 % Provide the name of your page, the date it was last updated, and a
    comment about what it's used for
41 \ProvidesPackage{stmglossariesacronyms}[2019/11/03 STMs custom LaTeX
    acronym definitions]
42
43 % If not loaded in advance, load the glossaries package with some default
    options
44 \@ifpackageloaded{stmglossariesbase}{\RequirePackage{stmglossariesbase
    }}%
45
46 % -----
47 % Options
48 % -----
49
50 % For options
51 \@ifpackageloaded{kvoptions}{\RequirePackage{kvoptions}}%
52
53 \SetupKeyvalOptions{%
54     family=stmglossariesacronyms,%
55     prefix=stmglossariesacronyms@,%
56     setkeys=\kvsetkeys,%
57 }
58
59 % Load styles
60 \DeclareBoolOption[true]{commands}
61
62 % Load styles
63 \DeclareBoolOption[true]{items}
64
65 % Load styles
66 \DeclareBoolOption[true]{styles}
67
68 % Automatically add the corresponding glossary entry to the acronym
69 \DeclareBoolOption[false]{autoaddglossaryentry}
70
71 % Add a link from the acronym to the glossary entry
72 \DeclareBoolOption[false]{linktoglossary}
73
74 % Process options
75 \ProcessKeyvalOptions{stmglossariesacronyms}
76
77 % -----
78 % Modules
79 % -----

```

```

80
81 % Load the items
82 \ifstmglossariesacronyms@items%
83   \@ifpackageloaded{stmglossariesacronymsitems}{\{%
84     \RequirePackage[%
85       autoaddglossaryentry={\ifstmglossariesacronyms@autoaddglossaryentry
86         true\else false\fi},%
87       linktoglossary={\ifstmglossariesacronyms@linktoglossary true\else
88         false\fi},%
89     ]{stmglossariesacronymsitems}%
90   }%
91 \fi%
92
93 % Load the styles
94 \ifstmglossariesacronyms@styles
95   \@ifpackageloaded{stmglossariesacronymsstyles}{\RequirePackage{
96     stmglossariesacronymsstyles}}
97 \fi
98
99 % Load the print commands
100 \ifstmglossariesacronyms@commands%
101   \@ifpackageloaded{stmglossariesacronymscommands}{\{%
102     \RequirePackage{stmglossariesacronymscommands}%
103   }%
104 \fi
105
106 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
107 % That's it %
108 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
109
110 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
111 % this file. LaTeX will ignore anything after this line.
112 \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 %

```

```

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 Composite Structures and Adaptive Systems
18 %
19 %           _ _/|_ _
20 %           / _/_/_/_/
21 %           www.dlr.de/fa/en      | / DLR
22 %
23 % Copyright (C) 2019-... DLR Composite Structures and Adaptive 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
33 %   comment about what it's used for
34 \ProvidesPackage{stmglossariesacronymscommands}[2019/10/27 STMs custom
35 %   LaTeX acronym commands]
36
37 % -----
38 % Commands
39 % -----
40
41 \newcommand{\printstmacronyms}{\printglossary[type=\acronymtype,
42 %   style=stmacronymstyle ,nonumberlist]}
43
44 %%%%%%%%%%%
45 % That's it                                     %
46 %%%%%%%%%%%
47
48 \endinput

```

D.5. stmglossariesacronymsstyles.sty

```

1 %%%%%%%%%%%

```



```

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 Composite Structures and Adaptive Systems
15 %
16 % --/|__
17 % /_/_/_/
18 % www.dlr.de/fa/en | DLR
19 %
20 % Copyright (C) 2019-... DLR Composite Structures and Adaptive 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}[2019/10/27 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{longtable}{\RequirePackage{longtable}}%
37 \@ifpackageloaded{tabu}{\RequirePackage{tabu}}%
38
39 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
40 % Functionality %
41 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

```

42
43 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
44 % Redefine package options %
45 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
46
47 %Den Punkt am Ende jeder Beschreibung deaktivieren
48 \renewcommand*{\glspostdescription}{}
49 % \renewcommand*{\glspostdescription}{\dotfill}
50
51 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
52 % Own styles %
53 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
54
55 % -----
56 % Acronym-styles
57 % -----
58
59 \newglossarystyle{stmacronymstyle}{%
60   \renewenvironment{theglossary}%
61     {\begin{longtabu} to \linewidth {lX}}%
62     {\end{longtabu}}%
63   % Header line
64   \renewcommand*{\glossaryheader}{%
65     %\textbf{Label} & \textbf{Symbol}
66     \tabularnewline%
67     \tabularnewline%
68     \endhead%
69     \endfoot%
70   }%
71   % indicate what to do at the start of each logical group
72   %\renewcommand*{\glsgroupheading}[1]{}%
73   %\renewcommand*{\glsgroupskip}{}% What to do between groups
74   \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
       groups
75   \renewcommand*{\glossaryentryfield}[5]{%
76     \glstentryitem{##1}\glstarget{##1}{##2}
77     & ##3\glspostdescription ##5% Description
78     \tabularnewline%
79   }
80 }
81
82 % -----
83 % Style to show the keys
84 % -----

```

```

85
86 \newglossarystyle{stmacronymlabelstyle}{%
87   \renewenvironment{theglossary}%
88     {\begin{longtabu} to \linewidth {lcX}}%
89     {\end{longtabu}}%
90   % Header line
91   \renewcommand*{\glossaryheader}{%
92     \textbf{Label} & \textbf{Acronym} & \textbf{Description}
93     \tabularnewline%
94     \tabularnewline%
95     \endhead%
96     \endfoot%
97   }%
98   % indicate what to do at the start of each logical group
99   %\renewcommand*{\glsgroupheading}[1]{}%
100  %\renewcommand*{\glsgroupskip}{}% What to do between groups
101  \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
102  \renewcommand*{\glossaryentryfield}[5]{%
103    \glentrycounterlabel{##1} &%
104    \glentryitem{##1}\glstarget{##1}{##2}&%
105    ##3\glspostdescription ##5% Description
106    \tabularnewline%
107  }
108 }
109
110 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
111 % That's it %
112 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
113
114 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
    this file. LaTeX will ignore anything after this line.
115 \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 %
11 % Usage
12 %   - Premble:
13 %     - \usepackage{stmglossariesglossary}
14 %     - \makeglossaries
15 %   - Document: e.g. (Adapt to your type of glossary item)
16 %     - \printglossary[type=main] or
17 %     - \printglossary[type=main,nonumberlist]
18 %   - Compilation: e.g. (Adapt to your type of glossary item)
19 %     - makeindex -s [MYTEXFILENAME].ist -o [MYTEXFILENAME].acr [
      MYTEXFILENAME].acn
20 %
21 % Revisions: 2019-10-27 Martin Raedel <martin.raedel@dlr.de>
22 %               Initial draft
23 %
24 % Contact:   Martin Raedel, martin.raedel@dlr.de
25 %             DLR Composite Structures and Adaptive Systems
26 %
27 %                               --/|__
28 %                               /_/_/_/
29 %   www.dlr.de/fa/en           | / DLR
30 %
31 % Copyright (C) 2019-... DLR Composite Structures and Adaptive Systems
32 %
33 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
34 % Content                                     %
35 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
36 %
37 % Declare that this style file requires at least LaTeX version 2e.
38 \NeedsTeXFormat{LaTeX2e}
39
40 % Provide the name of your page, the date it was last updated, and a
      comment about what it's used for
41 \ProvidesPackage{stmglossariesglossary}[2019/11/03 STMs custom LaTeX
      glossary definitions]
42
43 % If not loaded in advance, load the glossaries package with some default
      options
44 \@ifpackageloaded{stmglossariesbase}{\RequirePackage{stmglossariesbase}
      }{}%
45
46 % -----
47 % Options

```

```

48 % -----
49
50 % For options
51 \@ifpackageloaded{kvoptions}{\RequirePackage{kvoptions}}%
52
53 % Option family
54 \SetupKeyvalOptions{%
55   family=stmglossariesglossary,%
56   prefix=stmglossariesglossary@,%
57   setkeys=\kvsetkeys,%
58 }
59
60 % Load styles
61 \DeclareBoolOption[true]{commands}
62
63 % Load styles
64 \DeclareBoolOption[true]{items}
65
66 % Load styles
67 \DeclareBoolOption[true]{styles}
68
69 % Process options
70 \ProcessKeyvalOptions{stmglossariesglossary}
71
72 % -----
73 % Modules
74 % -----
75
76 % Load the items
77 \ifstmglossariesglossary@items
78   \@ifpackageloaded{stmglossariesglossaryitems}{\RequirePackage{
79     stmglossariesglossaryitems}}
80 \fi
81
82 % Load the styles
83 \ifstmglossariesglossary@styles
84   \@ifpackageloaded{stmglossariesglossarystyles}{\RequirePackage{
85     stmglossariesglossarystyles}}
86 \fi
87
88 % Load the print commands
89 \ifstmglossariesglossary@commands%
90   \@ifpackageloaded{stmglossariesglossarycommands}{\RequirePackage{
91     stmglossariesglossarycommands}}%

```

```

90 }%
91 \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 Composite Structures and Adaptive Systems
18 %
19 % --/|__
20 % /_/_/_/
21 % www.dlr.de/fa/en |/ DLR
22 %
23 % Copyright (C) 2019-... DLR Composite Structures and Adaptive 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}[2019/10/27 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 %
12 % Initial draft
13 %
14 % Contact: Martin Raedel, martin.raedel@dlr.de
15 %
16 % DLR Composite Structures and Adaptive Systems
17 %
18 %
19 %
20 % Copyright (C) 2019-... DLR Composite Structures and Adaptive 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{stmglossariesglossarystyles}[2019/10/27 STMs custom
    LaTeX glossary 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{longtable}{\RequirePackage{longtable}}%
37 \@ifpackageloaded{tabu}{\RequirePackage{tabu}}%
38
39 %
40 \@ifpackageloaded{stmbibliography}{\RequirePackage{stmbibliography}}%
41 \addbibresource{stmglossariesglossarysources.bib}
42
43 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
44 % Functionality %
45 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
46
47 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
48 % Redefine package options %
49 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
50
51 %Den Punkt am Ende jeder Beschreibung deaktivieren
52 \renewcommand*{\glspostdescription}{}
53 % \renewcommand*{\glspostdescription}{\dotfill}
54
55 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
56 % Own styles %
57 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
58
59 % -----
60 % glossary-styles
61 % -----
62
63 \newglossarystyle{stmglossarystyle}{%
64 \renewenvironment{theglossary}%

```



```

65     {\begin{longtabu} to \linewidth {lX}}%
66     {\end{longtabu}}}%
67 % Header line
68 \renewcommand*{\glossaryheader}{%
69     %\textbf{Entry} & \textbf{Symbol}
70     \tabularnewline%
71     \tabularnewline%
72     \endhead%
73     \endfoot%
74 }%
75 % indicate what to do at the start of each logical group
76 %\renewcommand*{\glsgroupheading}[1]{}% Group heading
77 \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
78 \renewcommand*{\glossaryentryfield}[5]{%
79     \glsentryitem{##1}\glstarget{##1}{##2}
80     & ##3\glspostdescription ##5% Description
81     \tabularnewline%
82 }
83 }
84
85 % -----
86 % Style to show entries with sources
87 % -----
88
89 \newglossarystyle{stmglossarysourcestyle}{%
90     \renewenvironment{theglossary}%
91     {\begin{longtabu} to \linewidth {lXc}}%
92     {\end{longtabu}}}%
93 % Header line
94 \renewcommand*{\glossaryheader}{%
95     %\textbf{Entry} & \textbf{Symbol} & \textbf{Sources}
96     \tabularnewline%
97     \tabularnewline%
98     \endhead%
99     \endfoot%
100 }%
101 % indicate what to do at the start of each logical group
102 %\renewcommand*{\glsgroupheading}[1]{}% Group heading
103 \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
104 \renewcommand*{\glossaryentryfield}[5]{%
105     \glsentryitem{##1}\glstarget{##1}{##2} &%
106     ##3\glspostdescription ##5 &%

```

```

107 \tabularnewline%
108 \ifglshasfield{useri}{##1}{\space%
109 % in the event of multiple cites, \glentryuseri{##1} needs to be
    expanded before being passed to \cite.
110 \glsetentryfield{\thiscite}{##1}{useri}%
111 \expandafter\cite\expandafter{\thiscite}%
112 }{}%
113 }
114 }
115
116 % -----
117 % Style to show the keys
118 % -----
119
120 \newglossarystyle{stmglossarylabelstyle}{%
121 \renewenvironment{theglossary}%
122 {\begin{longtabu} to \linewidth {lcX}}%
123 {\end{longtabu}}%
124 % Header line
125 \renewcommand*{\glossaryheader}{%
126 \textbf{Label} & \textbf{Entry} & \textbf{Description}
127 \tabularnewline%
128 \tabularnewline%
129 \endhead%
130 \endfoot%
131 }%
132 % indicate what to do at the start of each logical group
133 %\renewcommand*{\glsgroupheading}[1]{}%
134 %\renewcommand*{\glsgroupskip}{}% What to do between groups
135 \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
    groups
136 \renewcommand*{\glossaryentryfield}[5]{%
137 \glentrycounterlabel{##1} &%
138 \glentryitem{##1}\glstarget{##1}{##2}&%
139 ##3\glspostdescription ##5% Description
140 \tabularnewline%
141 }
142 }
143
144 % -----
145 % Style to show the keys with sources
146 % -----
147
148 \newglossarystyle{stmglossarylabelsourcestyle}{%

```

```

149 \renewenvironment{theglossary}%
150   {\begin{longtabu} to \linewidth {lcXc}}%
151   {\end{longtabu}}%
152 % Header line
153 \renewcommand*{\glossaryheader}{%
154   \textbf{Label} & \textbf{Entry} & \textbf{Description} & \textbf{
155     Sources}
156   \tabularnewline%
157   \tabularnewline%
158   \endhead%
159   \endfoot%
160 }%
161 % indicate what to do at the start of each logical group
162 %\renewcommand*{\glsgroupheading}[1]{}%
163 %\renewcommand*{\glsgroupskip}{}% What to do between groups
164 \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
165 groups
166 \renewcommand*{\glossaryentryfield}[5]{%
167   \glsentrycounterlabel{##1} &%
168   \glsentryitem{##1}\glstarget{##1}{##2}&%
169   ##3\glspostdescription ##5&%
170   \ifglshasfield{useri}{##1}{\space%
171     % in the event of multiple cites, \glsentryuseri{##1} needs to be
172     expanded before being passed to \cite.
173     \glsletentryfield{\thiscite}{##1}{useri}%
174     \expandafter\cite\expandafter{\thiscite}
175     }{}%
176   %\space ##2%
177   \tabularnewline%
178 }
179 }
180 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
181 % this file. LaTeX will ignore anything after this line.
182 \endinput

```

D.9. stmglossariessymbols.sty

```

1 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2 % Header %

```

```

3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %
5 % This file includes the common LaTeX
6 % symbols definitions
7 % (acronyms, glossaries, symbols)
8 % for structural mechanics
9 % Based upon the glossaries package:
10 %   https://ctan.org/pkg/glossaries
11 %
12 % Usage
13 %   - Premble:
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 Composite Structures and Adaptive Systems
27 %
28 %                                     _/_/_
29 %                               /_/_/_/_/
30 %       www.dlr.de/fa/en           |/_ DLR
31 %
32 % Copyright (C) 2019-... DLR Composite Structures and Adaptive 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}[2019/11/03 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 Composite Structures and Adaptive Systems
18 %
19 % _ _ / | _ _
20 % / _ / _ / _ /
21 % www.dlr.de/fa/en | / DLR
22 %
23 % Copyright (C) 2019-... DLR Composite Structures and Adaptive 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}[2019/10/27 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}}}%
75 %Add the operator to the list
76 \glsadd{sym:operator:dif:short:time}%
77 }
78
79 \newcommand{\timederivativeshorttwo}[1]{%
80 %The symbol
81 \ensuremath{\ddot{\#1}}}%
82 %Add the operator to the list
83 \glsadd{sym:operator:dif:short:time:2}%
84 }
85
86 \newcommand{\mean}[1]{%
87 %The symbol
88 \ensuremath{\overline{\#1}}}%
89 %Add the operator to the list
90 \glsadd{sym:operator:mean}%
91 }
92
93 \newcommand{\norm}[1]{%
94 %The symbol
95 \ensuremath{\glssymbol{sym:operator:norm:left}\#1\glssymbol{sym:operator:norm:right}}}%
96 %Add the operator to the list
97 \glsadd{sym:operator:norm}%
98 }
99
100 \newcommand{\transpose}[1]{%
101 \ensuremath{\#1^{\glssymbol{sym:operator:matrix:transpose}}}}%
102 }
103
104 \newcommand{\inverse}[1]{%
105 \ensuremath{\#1^{\glssymbol{sym:operator:matrix:inverse}}}}%
106 }
107
108 \newcommand{\partialderivativeshort}[2]{%
109 %The symbol

```



```

110 \ensuremath{#1_{\,#2}}%
111 %Add the operator to the list
112 \glsadd{sym:operator:differential:partial:short}%
113 }
114
115 % -----
116 % Printing
117 % -----
118
119 \newcommand{\printstmscalarglossary} {\printglossary[type=sclarlist ,
120 style=stmsymbolstyle ,nonumberlist]}
121 \newcommand{\printstmvectorglossary} {\printglossary[type=vectorlist ,
122 style=stmsymbolstyle ,nonumberlist]}
123 \newcommand{\printstmmatrixglossary} {\printglossary[type=matrixlist ,
124 style=stmsymbolstyle ,nonumberlist]}
125 \newcommand{\printstmstateglossary} {\printglossary[type=statelist ,
126 style=stmsymbolstyle ,nonumberlist]}
127 \newcommand{\printstmindexglossary} {\printglossary[type=indexlist ,
128 style=stmsymbolstyle ,nonumberlist]}
129 \newcommand{\printstmexponentglossary}{\printglossary[type=exponentlist,
130 style=stmsymbolstyle ,nonumberlist]}
131 \newcommand{\printstmoperatorglossary}{\printglossary[type=operatorlist,
132 style=stmoperatorstyle,nonumberlist]}
133
134 \newcommand{\printallstmsymbols}{%
135 \printstmscalarglossary%
136 \printstmvectorglossary%
137 \printstmmatrixglossary%
138 \printstmstateglossary%
139 \printstmindexglossary%
140 \printstmexponentglossary%
141 \printstmoperatorglossary%
142 }
143
144 %%%%%%%%%%%%%%%
145 % That's it %
146 %%%%%%%%%%%%%%%
147
148 \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>
11 %               Initial draft
12 %
13 % Contact:   Martin Raedel, martin.raedel@dlr.de
14 %           DLR Composite Structures and Adaptive Systems
15 %
16 %           _ _ / | _ _
17 %           / _ / _ / _ /
18 %           www.dlr.de/fa/en      | / DLR
19 %
20 % Copyright (C) 2019-... DLR Composite Structures and Adaptive 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{stmglossariessymbolsstyles}[2019/10/27 STMs custom LaTeX
    glossaries style definitions]
31
32 % Now paste your code from the preamble here
33
34 % If not loaded in advance, load the glossaries package with some default
    options
35 \@ifpackageloaded{stmglossariesbase}{\RequirePackage{stmglossariesbase
    }}%
36
37 %
38 \@ifpackageloaded{longtable}{\RequirePackage{longtable}}%
39 \@ifpackageloaded{tabu}{\RequirePackage{tabu}}%
40 \@ifpackageloaded{multicol}{\RequirePackage{multicol}}%
41
42 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

```

43 % Functionality %
44 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
45
46 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
47 % Redefine package options %
48 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
49
50 %Den Punkt am Ende jeder Beschreibung deaktivieren
51 \renewcommand*{\glspostdescription}{}
52 % \renewcommand*{\glspostdescription}{\dotfill}
53
54 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
55 % Own styles %
56 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
57
58 % -----
59 % Coordinate-system style
60 % -----
61
62 \newglossarystyle{mycoordinatesystemstyle}{%
63   %\renewcommand{\glossarysection}[2][{}]{% no title
64   \renewcommand*{\glsclearpage}{}% avoid page break before glossary
65   \renewenvironment{theglossary}%
66     {\begin{longtabu} to \linewidth {cX}}%
67     {\end{longtabu}}%
68   % Header line
69   \renewcommand*{\glossaryheader}{%
70     % Requires booktabs
71     %\toprule%
72     \textbf{Symbol} & \textbf{Description}%
73     \tabularnewline%
74     \tabularnewline%
75     %\midrule%
76     \endhead%
77     %\bottomrule%
78     \endfoot%
79   }%
80   % indicate what to do at the start of each logical group
81   %\renewcommand*{\glsgroupheading}[1]{}%
82   %\renewcommand*{\glsgroupskip}{}% What to do between groups
83   \renewcommand*{\glsgroupskip}{\tabularnewline}% What to do between
      groups
84   \renewcommand*{\glossentry}[1]{%
85     \glstryitem{##1}% Entry number if required

```

```

86     \glstarget{##1}{\glossentrysymbol{##1}} &
87     %\glossentrysymbol{##1}      & % Symbol
88     %\glossentryname{##1}        & % Name
89     \glossentrydesc{##1}        %& % Description
90     %\glentryuseri{##1}%         % Unit in User1-Variable
91     \tabularnewline%
92 }%
93 }
94
95 % -----
96 % Symbols-styles
97 % -----
98
99 \newglossarystyle{stmsymbolstyle}{%
100 %\renewcommand{\glossarysection}[2][{}]{% no title
101 \renewcommand*{\glsclearpage}{}% avoid page break before glossary
102 \renewenvironment{theglossary}%
103     {\begin{longtabu} to \linewidth {c1X}}{c}}%
104     {\end{longtabu}}}%
105 % Header line
106 \renewcommand*{\glossaryheader}{%
107     \textbf{Symbol} & \textbf{Name} & \textbf{Description}% & \textbf{
Unit}%
108     \tabularnewline%
109     \tabularnewline%
110     \endhead%
111     \endfoot%
112 }%
113 % What to do between groups
114 \renewcommand*{\glsgroupskip}{\tabularnewline}
115 \renewcommand*{\glossentry}[1]{%
116     \glentryitem{##1}% Entry number if required
117     \glstarget{##1}{\glossentrysymbol{##1}} &
118     %\glossentrysymbol{##1}      & % Symbol
119     \glossentryname{##1}        & % Name
120     \glossentrydesc{##1}        %& % Description
121     %\glentryuseri{##1}%         % Unit in User1-Variable
122     \tabularnewline%
123 }%
124 }
125
126 % -----
127 % Symbols-styles for papers
128 % -----

```

```

129
130 \newglossarystyle{stmonecolpapersymbolstyle}{%
131   %\renewcommand{\glossarysection}[2][{}]{% no title
132   \renewcommand*{\glsclearpage}{}% avoid page break before glossary
133   \renewenvironment{theglossary}%
134     {\begin{longtabu} to \linewidth {c1Xc1}}{c}}}%
135     {\end{longtabu}}}%
136   % Header line
137   \renewcommand*{\glossaryheader}{}%
138   % indicate what to do at the start of each logical group
139   %\renewcommand*{\glsgroupheading}[1]{%
140   % What to do between groups -> no skip
141   \renewcommand*{\glsgroupskip}{}
142   % How the entry looks like
143   \renewcommand*{\glossentry}[1]{
144     \glentryitem{##1}% Entry number if required
145     \glstarget{##1}{\glossentrysymbol{##1}} & % Symbol
146     \glossentryname{##1}          %& % Name
147     \tabularnewline%
148   }%
149 }
150
151 % https://tex.stackexchange.com/a/216434/44634
152 % needs: \usepackage{multicol}
153 \newglossarystyle{stmtwocolpapersymbolstyle}{%
154   %\renewcommand{\glossarysection}[2][{}]{% no title
155   \renewenvironment{theglossary}%
156     {\begin{multicols}{2}\raggedright}
157     {\end{multicols}}
158   % Header line
159   \renewcommand*{\glossaryheader}{}%
160   \renewcommand*{\glsgroupheading}[1]{% indicate what to do at the start
161     of each logical group
162   \renewcommand*{\glsgroupskip}{}% What to do between groups -> no skip
163   \renewcommand*{\glsclearpage}{}% avoid page break before glossary
164   % set how each entry should appear:
165   \renewcommand*{\glossentry}[2]{
166     \noindent\makebox[2.5em][c]{\glstarget{##1}{\glossentrysymbol{##1}}}%
167     Symbol
168     \glossentryname{##1}% Name
169     \newline
170   }

```

```

171 % -----
172 % Exponent-styles
173 % -----
174
175 \newglossarystyle{stmexponentstyle}{%
176   %\renewcommand{\glossarysection}[2][{}]{% no title
177   \renewcommand*{\glsclearpage}{}% avoid page break before glossary
178   \renewenvironment{theglossary}%
179     % \extrarowsep=1mm
180     {%
181       \begingroup
182       \renewcommand{\arraystretch}{1.4}
183       \begin{longtabu} to \linewidth {\@{\ \ }r@{ }lX}
184     }{%
185       \end{longtabu}
186       \endgroup
187     }%
188   % Header line
189   \renewcommand*{\glossaryheader}{%
190     \multicolumn{2}{@{}c@{}}{\textbf{Symbol}} & \textbf{Description}%
191     \tabularnewline%
192     \tabularnewline%
193     \endhead%
194     \endfoot%
195   }%
196   % indicate what to do at the start of each logical group
197   %\renewcommand*{\glsgroupheading}[1]{}%
198   % What to do between groups
199   %\renewcommand*{\glsgroupskip}{%
200   % What to do between groups
201   \renewcommand*{\glsgroupskip}{\tabularnewline}%
202   \renewcommand*{\glossentry}[1]{%
203     \glstentryitem{##1}% Entry number if required
204     \protect\ensuremath{\protect\left(\protect\phantom{a}\protect\right)}
205     &
206     \glstarget{##1}{\protect\ensuremath{\protect\vphantom{a}^{\protect\left(\protect\phantom{a}\protect\right)}}} &
207     \glossentrysymbol{##1}} & % Symbol
208     \glossentryname{##1} & % Name
209     \glossentrydesc{##1} & % Description
210     \glsentryuseri{##1}% % Unit in User1-Variable
211     \tabularnewline%
212   }%

```

```

213
214 % -----
215 % Index-styles
216 % -----
217
218 \newglossarystyle{stmindexstyle}{%
219   %\renewcommand{\glossarysection}[2][{}]{% no title
220   \renewcommand*{\glsclearpage}{}% avoid page break before glossary
221   \renewenvironment{theglossary}%
222     {%
223       \begingroup
224       \renewcommand{\arraystretch}{1.4}
225       \begin{longtabu} to \linewidth {\@{\ \ }r@{ }lX}
226     }{%
227       \end{longtabu}
228       \endgroup
229     }%
230   % Header line
231   \renewcommand*{\glossaryheader}{%
232     \multicolumn{2}{@{}c@{}}{\textbf{Symbol}} & \textbf{Description}%
233     \tabularnewline%
234     \tabularnewline%
235     \endhead%
236     \endfoot%
237   }%
238   % indicate what to do at the start of each logical group
239   %\renewcommand*{\glsgroupheading}[1]{}%
240   % What to do between groups
241   %\renewcommand*{\glsgroupskip}{}%
242   % What to do between groups
243   \renewcommand*{\glsgroupskip}{\tabularnewline}
244   \renewcommand*{\glossentry}[1]{%
245     \glentryitem{##1}% Entry number if required
246     \protect\ensuremath{\protect\left(\protect\phantom{a}\protect\right)}
247     &
248     %\glstarget{##1}{\glossentrysymbol{##1}} &
249     \glstarget{##1}{\protect\ensuremath{\protect\vphantom{a}_{\glossentrysymbol{##1}}}} &
250     %\glossentrysymbol{##1} & % Symbol
251     %\glossentryname{##1} & % Name
252     \glossentrydesc{##1} & % Description
253     %\glentryuseri{##1}% % Unit in User1-Variable
254     \tabularnewline%
255   }%

```

```

255 }
256
257 % -----
258 % Operator style
259 % -----
260
261 \newglossarystyle{stmoperatorstyle}{%
262   %\renewcommand{\glossarysection}[2][{}]{% no title
263   % avoid page break before glossary
264   \renewcommand*{\glsclearpage}{}
265   \renewenvironment{theglossary}%
266     % \extrarowsep=1mm
267     {%
268       \begingroup%
269       \renewcommand{\arraystretch}{1.4}%
270       %\begin{longtabu} to \linewidth {cX}
271       \begin{longtabu} to \linewidth {@{\ \ ;}r@{ }c@{ }lX}
272     }%
273     {%
274       \end{longtabu}
275       \endgroup
276     }%
277   % Header line
278   \renewcommand*{\glossaryheader}{%
279     \multicolumn{3}{@{}c@{}}{\textbf{Symbol}} & \textbf{Description}%
280     \tabularnewline%
281     \tabularnewline%
282     \endhead%
283     \endfoot%
284   }%
285   % indicate what to do at the start of each logical group
286   %\renewcommand*{\glsgroupheading}[1]{}%
287   % What to do between groups
288   %\renewcommand*{\glsgroupskip}{}%
289   % What to do between groups
290   \renewcommand*{\glsgroupskip}{\tabularnewline}
291   \renewcommand*{\glossentry}[1]{%
292     \glsentryitem{##1}% Entry number if required
293     %\glstarget{##1}{\glossentrysymbol{##1}} &
294     %\glstarget{##1}{\glossentrysymbol{##1}}&
295     \glsentryuseri{##1} &
296     \glsentryuserii{##1} &
297     \glsentryuseriii{##1} &
298     %\glossentrysymbol{##1} & % Symbol

```



```

299 %\glossentryname{##1} & % Name
300 \glossentrydesc{##1} %& % Description
301 %\glentryuseri{##1}% % Unit in User1-Variable
302 \tabularnewline%
303 }%
304 }
305
306 % -----
307 % Style to show the keys
308 % -----
309
310 \newglossarystyle{stmsymbollabelstyle}{%
311 \renewcommand*{\glsclearpage}{}% avoid page break before glossary
312 \renewenvironment{theglossary}%
313 {\begin{longtabu} to \linewidth {Xc}}%
314 {\end{longtabu}}%
315 % Header line
316 \renewcommand*{\glossaryheader}{%
317 \textbf{Label} & \textbf{Symbol}
318 \tabularnewline%
319 \tabularnewline%
320 \endhead%
321 \endfoot%
322 }%
323 % What to do between groups
324 \renewcommand*{\glsgroupskip}{\tabularnewline}
325 \renewcommand*{\glossentry}[1]{%
326 \glentryitem{##1}% Entry number if required
327 \glentrycounterlabel{##1} &
328 \glstarget{##1}{\glossentrysymbol{##1}}% &
329 \tabularnewline%
330 }%
331 }
332
333 \newglossarystyle{stmoperatorlabelstyle}{%
334 %\renewcommand{\glossarysection}[2][{}]{% no title
335 % avoid page break before glossary
336 \renewcommand*{\glsclearpage}{}
337 \renewenvironment{theglossary}%
338 {%
339 \begin{group}%
340 \renewcommand{\arraystretch}{1.4}%
341 \begin{longtabu} to \linewidth {X@{\ \;}r@{c@{}}l}
342 }%

```

```

343     {%
344         \end{longtabu}
345         \endgroup
346     }%
347 % Header line
348 \renewcommand*{\glossaryheader}{%
349     \textbf{Label} & \multicolumn{3}{@{}c@{}}{\textbf{Symbol}}}% & %
350     \tabularnewline%
351     \tabularnewline%
352     \endhead%
353     \endfoot%
354 }%
355 % indicate what to do at the start of each logical group
356 %\renewcommand*{\glsgroupheading}[1]{}%
357 % What to do between groups
358 %\renewcommand*{\glsgroupskip}{}%
359 % What to do between groups
360 \renewcommand*{\glsgroupskip}{\tabularnewline}
361 \renewcommand*{\glossentry}[1]{%
362     \glentryitem{##1}% Entry number if required
363     \glentrycounterlabel{##1} &
364     \glentryuseri{##1} &
365     \glentryuserii{##1} &
366     \glentryuseriii{##1}% &
367     \tabularnewline%
368 }%
369 }
370
371
372 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
373 % That's it %
374 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
375
376 % Finally, we'll use \endinput to indicate that LaTeX can stop reading
    this file. LaTeX will ignore anything after this line.
377 \endinput

```