bootstrapping/agents	Agents and tasks		
agSp	Agents		
\agSpYU	$Agents(\mathcal{Y};\mathcal{U})$	All agents with given formats.	
\agA	${\cal A}$	An agent	
\agExp	expl	Agent's exploration phase	
agAct	act	Agent's action phase	
\agAexp	$expl_{\mathcal{A}}$	Exploration phase for agent $A$ .	
\agAact	$act_\mathcal{A}$	Action phase for agent $A$ .	
agAwtor	$WtoR_\mathcal{A}$	Map from the world to the result for the agent,	
\agAwtob	$WtoB_\mathcal{A}$	•	
\agAintermediate	$intermediate_{\mathcal{A}}$		
\agSucAG	$success_\mathcal{A}^\mathcal{G}$	Success set for the agent $\mathcal{A}$ and goal $\mathcal{G}$ .	
\agRep	$m{m}$	Agent representation	
\agRepSp	$\mathfrak{M}$	Agent's model space	
agNuis	$\mathrm{G}_{\mathcal{A}}$	118ein b meder space	
\agNuisComp		Complement of $G_{\mathcal{A}}$ .	
\agNuisObs	$G_{\mathcal{A}}^{\mathcal{A}}$	Complement of $\mathcal{O}_{\mathcal{A}}$ .	
\agNuisCmd	$\mathcal{C}^{\mathcal{A}}$		
\aghtisemu	$G_{\mathcal{A}}$		
\agbbClCore	$C^0$		
, ,	$egin{array}{c} \mathrm{G}_{\mathcal{A}}^{\perp} & & & & \\ \mathrm{G}_{\mathcal{A}}^{\mathcal{Y}} & & & & \\ \mathrm{G}_{\mathcal{A}}^{\mathcal{U}} & & & & \\ C_{\mathcal{A}} & & & & \\ C_{\mathcal{A}}^{\mathcal{O}} & & & & \\ \mathcal{G} & & & & & \\ \end{array}$	The agent's goal (a subset of $StocProcesses(\mathcal{Y} \times \mathcal{Y})$	
agGoal	g	The agent's goal (a subset of Stochrocesses(9 x	
articles			
articles/bds	$BDS \ report$ $BDS(n; k)$		
articles/bds \BDSnk	$BDS\ report$ $BDS(n;k)$ $BDS$	Family of BDS sensors	
articles/bds \BDSnk \bgBDSfamily	BDS(n;k)	Family of BDS sensors Bilinear dynamics system	
articles/bds \BDSnk \bgBDSfamily \bds	$\frac{BDS(n;k)}{BDS}$	Family of BDS sensors Bilinear dynamics system	
articles/bds \BDSnk \bgBDSfamily \bds \BDS	$\begin{array}{c} BDS(n;k) \\ BDS \\ BDS \end{array}$	Bilinear dynamics system	
articles/bds \BDSnk \bgBDSfamily \bds \BDS	BDS(n;k) $BDS$ $BDS$ $BDS$	Bilinear dynamics system omitted sum	
articles/bds \BDSnk \bgBDSfamily \bds \BDS  \TT	$\begin{array}{c} BDS(n;k) \\ BDS \\ BDS \end{array}$	Bilinear dynamics system	
articles/bds \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe	BDS(n;k) $BDS$ $BDS$ $BDS$ $BDS$ $BDS$	Bilinear dynamics system omitted sum Learned tensor ?	
articles/bds \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe \TU	BDS(n; k) BDS BDS BDS T T T	Bilinear dynamics system  omitted sum Learned tensor ? Learned tensor	
articles/bds \BDSnk \bds \BDSfamily \bds \BDS  \TT \TTe \TU	BDS(n;k) $BDS$ $BDS$ $BDS$ $BDS$ $DDS$	Bilinear dynamics system  omitted sum Learned tensor ? Learned tensor Learned tensor	
articles/bds \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe \TU \TUe \TM	BDS(n;k) $BDS$ $BDS$ $BDS$ $BDS$ $DDS$	Bilinear dynamics system  omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics	
articles/bds \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe \TU \TUe \TM	BDS(n; k) BDS BDS BDS BDS U U M M	Bilinear dynamics system  omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Bilinear tensor in BDS dynamics	
articles/bds  \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe \TU \TUe \TM \TMe \TM	BDS(n; k) BDS BDS BDS BDS U U M M M	Bilinear dynamics system  omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Bilinear tensor in BDS dynamics Bilinear tensor in BDS dynamics	
articles/bds  \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe \TU \TUe \TM \TMe \TM \TMe	BDS(n; k) BDS BDS BDS BDS U U M M M N N	omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics	
articles/bds  BDSnk  bgBDSfamily  bds  BDS  omsum{}  TT  TTe  TTU  TUe  TM  TMe  TM  TNe  TN	BDS(n; k) BDS BDS BDS BDS U U M M M N N P	omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y.	
articles/bds   BDSnk	BDS(n; k) BDS BDS BDS BDS U U M N N P P	omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y. Covariance of y.	
articles/bds  \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe \TU \TUe \TM \TMe \TN \TNe \Tcov \Tcove \Tcove	BDS(n; k) BDS BDS BDS BDS BDS N T T U U N N N N P P Q	omitted sum Learned tensor ? Learned tensor Bilinear tensor in BDS dynamics Covariance of y. Covariance of y. Covariance of y.	
articles/bds ABDSnk AbgBDSfamily Abds	BDS(n; k) BDS BDS BDS BDS BDS BDS P C C C C C C C C C C C C C C C C C C	omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y.	
articles/bds (BDSnk (bgBDSfamily (bds (BDS (omsum{}) (TT (TTe (TU (TUe (TM (TMe (TN (TNe (Tcov (Tcove (Tucov (Tucove (discInt	BDS(n; k) BDS BDS BDS BDS BDS BDS P Q Q Q T	omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y. Covariance of y. Covariance of y. Covariance of y. Discretization interval	
articles/bds  \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe \TU \TUe \TM \TMe \TN \TNe \TCov \Tcove \Tucove \Tucove \discInt \nearavg	BDS(n; k) BDS BDS BDS BDS BDS BDS  T T U U W M N N P P Q Q Q T  \( \bar{\pmu}	omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y.	
articles/bds  \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe \TTU \TUe \TM \TMe \TM \TNe \TCov \Tcove \Tucove \Tucove \discInt \nearavg	BDS(n; k) BDS BDS BDS BDS BDS BDS P Q Q Q T	omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y. Covariance of y. Covariance of y. Covariance of y. Discretization interval Average nearness	
articles/bds  \BDSnk \bgBDSfamily \bds \BDS  \TT \TTe \TU \TUe \TM \TMe \TN \TNe \TCove \Tcove \Tucov \Tucove	BDS(n; k) BDS BDS BDS BDS BDS BDS  T T U U W M N N P P Q Q Q T  \( \bar{\pmu}	omitted sum Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y. Covariance of y. Covariance of y. Covariance of y. Discretization interval	

\bgCmd	u	commands
\bgCmdH	$\boldsymbol{u}^{\mathbb{T}}$	commands history
\bgCmdSp	$\mathfrak U$	commands space
\bgWorld	W	World
\bgWorldSp	$\mathcal{W}$	World space
, 0		$W \in \mathcal{D}(\mathbb{T}, \mathcal{U}, \mathcal{Y})$
		\$\bgWorld \in \bgRSSp(\bgTime, \bgCmdSp, \bgObsS
\bgAgent	agent	Agent
\bgAgentEx	learn	Agent exploration
\bgAgentAc	act	Agent action
\bgAgentRep	r	Agent representation
\bgAgentRepSp	${\mathcal R}$	Agent representation space
\bgAgentSp	Agents	Agent action
\bgCmdTr	g	Transformation of the commands
\bgCmdTrSp	$^{\mathbf{G}^{\mathcal{U}}}$	
\bg0bsTr	$\overset{\smile}{h}$	Transformation of the observations
\bg0bsTrSp	$G^{y}$	
\bgSamplingGroup	Sampling	Groups of sampling operations
\bgCalibration	Calib	Calibration operation
\bgBDSagent	$A_{BDS}$	The BDS agent
\bgBGDSagent	$A_{BGDS}$	The BGDS agent
\bgPopCode	pop	Popoulation code
\bgRankCode	rankcode	Rank code
\bgRangeFamily	RF	Family of range-finders models
\bgCmdConstraints	$\Omega_{m{u}}$	raining of rainge initiates into dela
\bgPopK	$\psi$	
/-01	7	
articles/bgds/old	$BGDS\ report$	
\state	$oldsymbol{x}$	Generic underlying state.
\detecte	d	Detector
$\setminus \mathtt{submean}\{\dots\}$		Quantity with mean normalized.
\dist	$\sigma$	Distance to obstacle
\distn	$\sigma^*$	Distance to obstacle, mean normalized.
\rfnl	eta	Nonlinear function in range-finder tensors.
\near	$\mu$	Nearness
\lum	y	Luminance
\lumn	$y^*$	Luminance, mean normalized
\sptran	$\ell$	Sensor pose (translation)
\sprot	$\ell_{m{ heta}}$	Sensor pose (rotation)
\slvel	$v^s$	Sensor linear velocity (when off axis)
\savel	$\omega^s$	Sensor angular velocity (when off axis)
\TX	X	Generic metric
\TXe	X	Generic metric
\OS	$\mathbf{S}$	$S = s \times \nabla$
\convf	$f_st$	Indicates the convolution with a kernel $f$ .
my	m	Metric on the tangent space of $y(s)$ .
\bgBGDSfamily	BGDS	Family of BGDS sensors
\BGDSsk	$BGDS(\mathcal{S};k)$	
\focal	F	Pinhole camera focal length.
traindist	$p_{ m T}$	Training distribution.
	-	

\trainsym	$Sym(p_{\mathrm{T}})$	Symmetry group of $p_{\rm T}$ .
articles/bgds/logical	Gradient dynamics	
obslsp	Z	Observation logical space
obsl	z	Observations in logical space
obsle	z	Observation logical space element
\xtos		Mapping between $S$ and $Z$ .
\jac	$arphi$ $oldsymbol{J}$	Jacobian of $\varphi$
\jace	J	An element of the Jacobian of $\varphi$ .
, '-		
\mz	$\mu$	Metric on the tangent space of $z(x)$ .
\mmu	M	Metric for the commands $u$ .
articles/bgds/logical/grads	Gradient dynami	cs
Tzgd	L	z gradient dynamics
\Tzgde	L	z gradient dynamics (element)
\Tzgl	M	z gradient learned tensor
\Tzgle	M	z gradient learned tensor (element)
\Tzgcov	S	z gradient covariance
\Tzgcove	S	z gradient covariance (element)
\Tzad	E	Affine part of dynamics.
\Tzade	Ē	Affine part of dynamics.  Affine part of dynamics (element)
,	F	
\Tzal		Learned affine part of dynamics.
\Tzale	F	Learned affine part of dynamics (element)
articles/bgds/tensors	$BGDS\ report$	
Tygd	G	$m{y}$ gradient dynamics
Tygde	G	$\boldsymbol{y}$ gradient dynamics (element)
Tygl	Н	$\boldsymbol{y}$ gradient learned tensor
Tygle	Н	$\boldsymbol{y}$ gradient learned tensor (element)
Tygcov	R	$m{y}$ gradient covariance
Tygcove	R	y gradient covariance (element)
\Tyad	В	Affine part of dynamics.
\Tyade	В	Affine part of dynamics (element)
\Tyal	C	Learned affine part of dynamics.
\Tyale	C	Learned affine part of dynamics (element)
(-)	_	(
articles/bgds/models/deprecated	Definition of ran	
\bgTime	${\mathbb T}$	Time axis
\bgRS	D	Random model
\bgRSSp	$\mathfrak{D}$	All models
\bgRSinput	$\boldsymbol{a}$	Input signal
\bgRSinputSp	$\mathcal{A}$	
\bgRSinputH	$\boldsymbol{a}^{\mathbb{T}}$	History of input signal
\bgRSoutput	$\boldsymbol{b}$	
\bgRSoutputH	$\boldsymbol{b}^{\mathbb{T}}$	History of output signal
\bgRSoutputSp	В	
\bgRSinputTr		
\bgRSinputTrSp	$oldsymbol{g} \mathbf{G}^{\mathcal{A}}$	
\bgRSoutputTr	h	
, ,	$^{m{n}}$ G $^{m{\mathcal{B}}}$	
\bgRSoutputTrSp		1
\bg0bs	y	observations

\bg0bsH	$oldsymbol{y}^{\mathbb{T}}$	observations history
\bg0bsSp	y	observation space
articles/camera	Camera paper	
rank	order	
\place	place	
\ff	$f_{-}$	Distance to similarity function
Sany	$\mathfrak{M}$	Generic hypersphere
\targetSp	$\mathfrak{M}$	Target manifold
Ssubset	$M_{\underline{}}$	A subset of $M$ XXX
\infr	infr	Informative radius
\ffr	$\inf_{f}(f)$	Informative radius of $f$
distradius	rad	Radius of a distribution
\distdiam	diam	Diameter of a distribution
\hausdorff	hausdorff	Hausdorff distance
\kimberley	kim	Kimberley value
\errproc	$e_{ m pr}$	Procrustes score
\isoError	$e_iso$	
\symError	$e_{sym}$	
relError	$e_{r}$	
\scaledRelError	$e_{\sf sr}$	
angcorr	$ ho_{ heta}$	
\spearperf	$ ho_{ m sp}$	Spearman performance measure
\spearperfn	$ ho_{ m sp}^*$	Normalized Spearman performance measure
\dirset	8	Set of directions
\dirmat	${f S}$	Directions stacked in a matrix
\matX	${f X}$	
\matI	I	
arot	${f X}$	
cosmat	${f C}$	
\cosmatij	$\mathrm{C}_{ij}$	
\distmat	$\mathbf{D}^{'}$	
\distmatij	$\mathrm{D}_{ij}$	
\simmat	$\overset{-}{\mathbf{Y}}^{ij}$	Similarity matrix
\simmatij	${ m \overset{ ext{-}}{Y}}_{ij}$	~
\simmatii	$\overset{ij}{\mathrm{Y}_{ii}}$	
\simmatkl	${ m Y}_{kl}$	
\algorparam	$\gamma$	
\shannon	$^{\prime}_{ m H}$	
\fov	FOV	field of view
\SKalgo	SK	Shepard-Kruscall algorithm
\SBSEw	SKv + w	An extension to the SK algorithm
\SBSE	$SKv+w \\ SKv$	An extension to the SK algorithm (without war
SDSL	D110	All extension to the oir argorithm (without war
articles/dds	$DDS\ report$	
ddsres	ρ	Resolution of the sensor in a DDS.
ddsarea	$ \mathcal{S} $	Area of the manifold $S$ .
\ddsbound	$d_{ m max}$	Bound on the maximum diffeomorphism in a DD
\DDS	DDS	
\dds	DDS	
ddsl	DDSL	
1		

\DDSsu	$DDS(\mathcal{S};\mathcal{U})$	
\DDSLsvu	$DDSL(\mathcal{S},\mathcal{V};\mathcal{U})$	
\bgDDSfamily	DDS	
\bgDDSLfamily	DDSL	
\diffeoURL	???	Model
\cmdAlphabet	u	11000
\ncmdwords	$ \mathcal{U} $	Number of commands words.
\obsspD	$d^{\mathcal{S}}$	Metric on $S$ .
\diffId	$Id_\mathcal{S}$	Identity diffeomorphisms.
\diffU	$\Gamma$	Uncertainty of estimated diffeomorphism.
\diffDist	$d^{Diff}$	Distance between two diffeomorphism.
\cmdDist	${\mathcal{D}_{\mathrm{cmd}}}$	Distance between two diffeomorphism.  Distance between two commands.
\cmdDist \cmdADist	$\mathcal{A}_{\mathrm{cmd}}$	Anti-distance between two commands.
\images	$\mathcal{A}_{\mathrm{cmd}} \ \mathbb{F}(\mathcal{S})$	Allti-distance between two communes.
\ddsfov	$\mathcal{V}$	Field of view for DDS
/dds10v	V	Fleid of view for DDS
articles/estgroups	Estimation with	symmetries
articles/estgroups/state	State	
\esSt	x	State
\\esStDim	n	Dimension of state space
\esStSp	$\mathfrak{X}$	State space
\esStDist	$\mu^{\chi}_{m{x}}$	Prior for state
<b>V</b>	r ut	
articles/estgroups/observations	Observations	
\es0bs	$oldsymbol{y}$	Observations Observations dimensions
\esObsDim	m	Observations dimensions
\es0bsSp	y	Observation space
\es0bsMap	h	Observation map
		y = nh(x)
		<pre>\$\es0bs = \esNuis \es0bsMap(\esSt)\$</pre>
articles/estgroups/nuisances	Nuisances	
\esNuis	$\overline{n}$	Nuisance
\esNuisSp	N	Nuisance group
\esNuisDist	$\mu_{m{n}}^{ ext{N}}$	Nuisance distribution
,		
articles/estgroups/estimators		s and performances
\esEst	m	Estimator
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<b>^ ^</b>	The state of the s
\esEstSp	$\mathcal{M}$	Estimator set
\esEstSp0pt	$\mathcal{M}^{\star}$	Optimal subset of estimators
\esEstSpOpt \esRisk	$\mathcal{M}^{\star}$ $e$	Optimal subset of estimators Risk function
\esEstSpOpt \esRisk \esRiskSp	$\mathcal{M}^{\star}$	Optimal subset of estimators Risk function Risk space
<pre>\esEstSpOpt \esRisk \esRiskSp </pre>	M* e €	Optimal subset of estimators Risk function Risk space Risk distribution for given estimator
<pre>\esEstSpOpt \esRisk \esRiskSp  \esRiskDistPO</pre>	M* e €	Optimal subset of estimators Risk function Risk space Risk distribution for given estimator Partial order defining preference on distributions
<pre>\esEstSpOpt \esRisk \esRiskSp </pre>	$\mathcal{M}^{\star}$ $e$	Optimal subset of estimators Risk function Risk space Risk distribution for given estimator
<pre>\esEstSpOpt \esRisk \esRiskSp  \esRiskDistPO</pre>	M* e €	Optimal subset of estimators Risk function Risk space Risk distribution for given estimator Partial order defining preference on distributions Estimation problem
<pre>\esEstSpOpt \esRisk \esRiskSp  \esRiskDistPO \esProb</pre>	$\mathcal{M}^{\star}$ $e$ $\mathcal{E}$ $\stackrel{\preceq}{\mathcal{P}}$	Optimal subset of estimators Risk function Risk space Risk distribution for given estimator Partial order defining preference on distributions Estimation problem
<pre>\esEstSpOpt \esRisk \esRiskSp  \esRiskDistPO \esProb articles/estgroups/symmetries</pre>	$\mathcal{M}^{\star}$ $e$ $\mathcal{E}$ $\preceq$ $\mathcal{P}$ Symmetries in the	Optimal subset of estimators Risk function Risk space Risk distribution for given estimator Partial order defining preference on distributions Estimation problem  he problem Abstract state
\esEstSpOpt \esRisk \esRiskSp \esRiskDist{\ldots} \esRiskDistPO \esProb  articles/estgroups/symmetries \esStAb	$\mathcal{M}^{\star}$ $e$ $\mathcal{E}$ $\stackrel{\prec}{\sim}$ $\mathcal{P}$ $Symmetries \ in \ therefore \lambda$	Optimal subset of estimators Risk function Risk space Risk distribution for given estimator Partial order defining preference on distributions Estimation problem  he problem

		$arphi:x\mapsto lpha.$
		<pre>\$\esRep: \esSt \mapsto \esStAb\$.</pre>
\esStSym	A	Group of symmetries of the state
\es0bsSym	В	Group of symmetries of the observation
\esRiskSym	С	Group of symmetries of the risk function
\esPOSym	D	Group of symmetries acting on the partial order
\esProbSym	${\mathcal S}$	Tuple of symmetries
articles/groupspectral	$Group\ spectral$	properties
\gsHom	HomMaps	Induced homomorphisms.
\gsImage	Image	
\gsEqs	$\operatorname{EqSet}$	Fixed points of a function.
\gsGA	$\operatorname{GrAct}$	If the function is the action of a group.
\gsGAsym		Used to specify that a function can be expressed
\gsSym	$\ddot{ ext{Sym}}$	Set of symmetries
\gsStrongCan	$\operatorname{SCan}$	Strong canonization operator
\gsWeakCan	WCan	Weak canonization operator
\gsEquiCan	BCan	Bold canonization operator
\gsEndoCan	MCan	Mild canonization operator
\gsUnCan	UCan	Unstructured canonization operator
\gsNuis	Sample	0 or
regular	regular	
\unstr	~	Unstructured symbol.
\jokFunc	*	Joker function
\zerFunc	$\hat{0}$	Zero function
Zerrune	O	Zero runemon
articles/groupspectral/defs	$Group\ spectral$	properties
\gsdContravariant	$\xrightarrow{-1}$	Contravariance
\gsdInvariant	$\xrightarrow{0}$	Invariance
\gsdEquivariant	$\overset{Id}{\longrightarrow}$	Equivariance
\gsdIntroduces	* <del>*</del>	Nuisance introduced
, 0	~(	Unstructured result
\gsdUnstructured	$\longrightarrow$	Unstructured result
articles/invariances	Invariances	
$\rdot rndual{}$		Dual of a representation nuisance
articles/soattotheory	Symbols used b	by Soatto
\scene	ξ	scene
representation	ξ ξ̂ ξ̂^	representation
\minrep	$\mathring{\hat{\epsilon}} \lor$	minimal representation
\feature	$\overset{ullet}{\phi}$	feature
\maxinv	$\phi^{\wedge}$	maximal invariant feature
\suffstat	$\overset{\varphi}{\phi}{}^{\vee}$	maximal invariant feature
\image	$\overset{arphi}{\mathcal{I}}$	image
\addnoise		additive noise
\imageform	$n \\ h$	image formation function
\groupnuis		nuisance which have the structure of a group
\othernuis	g	other non-invertible nuisance
\lightfield	$\stackrel{ u}{\mathcal L}$	all possible images generated by a scene
/TTRUCTTGTQ		an nossinie imaves veneraled by a scene
\complex	$\stackrel{m{ ilde{\omega}}}{H}$	Complexity measure

\actinfo	${\cal H}$	Actionable information
covdet	$\psi$	Covariant detector
articles/thesis	Special symbols for	or thesis
\labelrefinement	ref	Indicates a refinement
\pchomeoR	$PieceHomeo(\mathbb{R})$	
	1 100011011100 (22)	used in properties1.dot
		and all properties.
\bitZ		
\bit0	 ⊡	
\infbinstrings	$\{\Box, \boxdot\}^{\mathbb{N}}$	Set of infinite binary strings
\chineseClose	(nosummary)	The Chinese character corresponding to "close"
\twosignals	$y^i, y^j$	The Chinese character corresponding to close
\twosignalsa	$\overset{g}{y^i},\overset{g}{y^i}$	
\twosignalsb	$\overset{g}{y^{j}}$	
\twosignalscolon	$\overset{g}{y^i};y^j$	
\semrelorder	m = m	Order of a generic semantic relations
\infinit	$\stackrel{m}{d}$	Infinitesimal
\genericsemrel	$\overset{\scriptscriptstyle{lpha}}{\mathcal{R}}$	A generic semantic relation.
\genericsemrel \gensemrelsym	$Sym(\mathcal{R})$	Symmetries of the semantic relation
\genericsimilarity	R	A generic similarity measure.
\obsecdf	c	CDF of one sensel
\cmdreverse	ho	The map from a command to its reverse.
\cmdopt	$\overset{ ho}{oldsymbol{u}^{\star}}$	The optimal command
\cmdopt\	$u^{nop}$	Command corresponding to "resting".
\rew	R	Reward function
\placeneig	Neighbors	neward innerion
\genericrel	$\sim$	Generic relation
\notgenericrel	~ ~	Generic relation
/morgenericier	/~	
articles/thesis/longexample	Long example	
\CalibA	CalibA	
\CalibB	CalibB	
\Smoothkernel	k	
\Smooth	$Smooth_k$	
\BGDSAg	BGDSagent	
\BGDSAgS	BGDSagentS	
DImagesU	$\mathfrak{D}(Images(\mathcal{S}); \mathfrak{U})$	
DImagesR	$\mathfrak{D}(Images(\mathcal{S}); \mathbb{R}^{n_{t}})$	4)
ABehavior	behavior	
DImagesSphU	$\mathfrak{D}(Images(\mathbb{S}^2);\mathcal{U})$	
hobs	$\boldsymbol{x}$	
hobse	x	
bound	M	
common	$Common\ symbols$	to all papers
common/abbreviations	$Other\ abbrevation$	is
\setA	А	
\setB	${\mathfrak B}$	
\setC	C	

\setU	$\mathcal{U}$	
\setM	$\mathfrak{M}$	
\setY	y	
\setX	$\overset{\circ}{\chi}$	
\setZ	$\mathcal{Z}$	
	S S	
\setS		
\grG	G	
\grH	H	
\grK	K	
\grN	N	
common/abbreviations/invariances/abbreviations		
\sqa	a	
\sqae	a	
\sqb	b	
\sqbe	b	
\sqc	c	
\sqce	c	
\sqce	C	
common/acronyms	A cronyms	
oumon, doz cijiii		
common/algebra	Algebra	
ones	1	
\idMat	Ī	Identity matrix
\matTrace	Tr	Trace of a matrix.
\angleFun		Angle function
\flatten	∠ vec	Matrix-to-vector rearrangement.
/ITarren	vec	Mathx-to-vector rearrangement.
common/basic	Basic stuff	
\setfun	$\Rightarrow$	Symbol for set functions (one-to-many)
\algfield	$\stackrel{ ightarrow}{ ext{field}}$	Field.
/gīRīīaīa	neiu	
		$field(X, +, \times)$ is an algebraic field.
		$\alpha(\alpha(X),+,\times)$ is an algebraic fi
\wellorder	wellorder	A well ordered set.
,		wellorder( $\mathfrak{X}, \leq$ ) is a well-ordered set.
		<pre>\$\wellorder(\aset{X},\leq)\$ is a well-ordered set</pre>
\orderedfield	orderedfield	A well ordered field.
1		orderedfield( $\mathfrak{X},+,\times,\leq$ ) is a well-ordered field.
		$\color= \color= \col$
		w/ordorodriota//dboolul,,,/ormos,/rod/+
\nowerset	powerset	well-ordered field.
\powerset	powerset	well-ordered field. Power set of a space
\supp	supp	well-ordered field.  Power set of a space  Support of a set
\supp \idFunc	supp Id	well-ordered field.  Power set of a space Support of a set The identity function
\supp \idFunc \invFunc	supp ld 1	well-ordered field.  Power set of a space Support of a set The identity function Inverse function
\supp \idFunc \invFunc \funcComp	supp Id 1	well-ordered field.  Power set of a space Support of a set The identity function Inverse function Function composition
\supp \idFunc \invFunc \funcComp \emptysequence	supp Id 1 ○	Well-ordered field.  Power set of a space Support of a set The identity function Inverse function Function composition Empty sequence
\supp \idFunc \invFunc \funcComp	supp Id 1	well-ordered field.  Power set of a space Support of a set The identity function Inverse function Function composition Empty sequence All maps from a space to the other
\supp \idFunc \invFunc \funcComp \emptysequence	supp Id 1 ○	Well-ordered field.  Power set of a space Support of a set The identity function Inverse function Function composition Empty sequence
\supp \idFunc \invFunc \funcComp \emptysequence \allFuncs	supp Id1  ○ Ø Functions	well-ordered field.  Power set of a space Support of a set The identity function Inverse function Function composition Empty sequence All maps from a space to the other

common/sequences	Sequences	
\sequences	Sequences	Set of sequences
\contsequences	ContSequences	Set of continuous sequences
\Aut	Aut	Automorphism group
contFuncs	Continuous	Continuous functions on some metric space
		Continuous( $\mathcal{A}$ ) are all continuous functions on $\mathcal{A}$
		<pre>\$\contFuncs(\setA)\$ are all continuous functions</pre>
		\$\setA\$.
\differFuncs	Differentiable	Differentiable functions
\partitions	partitions	
\mExp	mexp	Matrix exponential
\big0	O	Big-O notation
\smallo	0	2.8 c netwich
\definedas	$\triangleq$	
\crossprod	×	cross-product
\gsDom	Domain	cross product
\gsCod	Codomain	
\interCC{,}	Codomain	
\interCO{,}		
\interOC{,}		
\inter00\{\ldots\ldots\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
\unitInterval	[0, 1]	
/unitinter var	[0,1]	
common/basic/logic	Logic	
logicAnd	Λ	Logic "and"
\logicOr	$\vee$	Logic "or"
\logicNot	$\neg$	Logic "not"
	~. ·	
common/simplesets	Simple sets	
reals	$\mathbb{R}$	Real numbers
natnumbers	N	Natural numbers
ratnumbers	Q	Rational numbers
hreals	*R	Hyper-real numbers
\nonNegReals	$\mathbb{R}^+_{ullet}$	Non negative reals
\posReals	$\mathbb{R}^+_\circ$	Strictly positive reals
\nzReals	$\mathbb{R}_{\circ}$	Non zero reals
common/blackboxes	Black boxes	
	Diack ooxes	A black box
	D	A DIACK DOX
\bbD	D	Inverse of a black box
		left inverse of a black box
	AUO Las sas	right inverse of a black box
\alloutcomes	AllOutcomes	A 11
\alloutputs	AllOutputs	All outputs of a given system
\bbDelay	$\Delta$	The one-step delay system.
\vertblock	I	A
\bbAccum		Accumulator system
\inLoop	Loop	Closes the loop around a system
\idSys	IdSys	The identity system

\bbSp	$\mathfrak D$	Set of black boxes
		$\mathcal{D}(\mathfrak{X}; \mathfrak{Y})$ are all the black boxes from $\mathfrak{X}$ to $\mathfrak{Y}$ .
		<pre>\$\bbSp(\setX;\setY)\$ are all the black boxes from</pre>
		\$\setX\$ to \$\setY\$.
\bbFM	$\mathfrak{D}_{fm}$	Systems with finite memory
\bbSpInv	D*	Set of invertible systems
\bbFMinv	$\mathcal{D}^{\star}_{fm}$	Systems with finite memory and invertible
\bbSpIns	$\mathcal{D}_{ ext{fm}}$	Set of instantaneous systems
\bbSpDet	$\mathcal{D}_{ ext{inst}}$	Deterministic systems
• =		
\bbSpInvIns	$\mathcal{D}^{\star}_{\mathrm{inst}}$	Set of invertible and instantaneous systems.
		$\mathcal{D}^*(\mathcal{A})$ is a subset of $\mathcal{D}(\mathcal{A};\mathcal{A})$
		<pre>\$\bbSpInv(\setA)\$ is a subset of</pre>
		<pre>\${\bbSp(\setA;\setA)}\$</pre>
\bbSpCore	$\mathcal{D}^{\circ}$	Systems up to representation
common/blackboxes/abbreviations		
\bbDinv	$D^{-1}$	
\bbDri	$\boldsymbol{D}^R$	
\bbDli	$\boldsymbol{D}^L$	
\bbE	E	
\bbF	$\overset{oldsymbol{\mathcal{L}}}{F}$	
\bbG	$\overline{G}$	
\bbSpBA	$\mathfrak{D}(\mathfrak{B};\mathcal{A})$	to write
\bbSpAB	$\mathcal{D}(\mathcal{A};\mathcal{B})$	to write
Опория	$\nu(\sigma\iota, \nu)$	to write
		-
common/blackboxes/deprecated	Deprecated	O 111 11 11 11 11 11 11 11 11 11 11 11 1
\bb0p	$\oplus$	Composition operation
_		Composition operation Series of two systems
\bb0p	$\oplus$	Series of two systems
\bbOp \inSeries common/boot	⊕ Series Bootstrapping	Series of two systems $symbols$
\bb0p \inSeries common/boot common/boot/obscmd	$\oplus$ Series $Bootstrapping$ $Observations\ a$	Series of two systems  symbols  and commands
\bb0p \inSeries common/boot common/boot/obscmd \world	⊕ Series  Bootstrapping  Observations of w	Series of two systems $\frac{symbols}{and\ commands}$ The "world", an element of $\mathcal{D}(\mathcal{Y};\mathcal{U})$ .
\bbOp \inSeries common/boot common/boot/obscmd \world \obs	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$	Series of two systems $\frac{symbols}{and\ commands}$ The "world", an element of $\mathcal{D}(\mathcal{Y};\mathcal{U})$ . Observations.
\bbOp \inSeries  common/boot  common/boot/obscmd \world \obs \obse	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$	Series of two systems  symbols  and commands  The "world", an element of $\mathcal{D}(\mathcal{Y}; \mathcal{U})$ . Observations. Observations (element) – also called "sensel"
\bbOp \inSeries  common/boot  common/boot/obscmd \world \obs \obse \cmd	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$	Series of two systems  symbols  and commands  The "world", an element of $\mathcal{D}(\mathcal{Y}; \mathcal{U})$ . Observations. Observations (element) – also called "sensel" Commands, in general.
\bbOp \inSeries  common/boot  common/boot/obscmd \world \obs \obse \cmd \cmde	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$	Series of two systems  symbols  and commands  The "world", an element of $\mathcal{D}(\mathcal{Y}; \mathcal{U})$ .  Observations.  Observations (element) – also called "sensel"  Commands, in general.  Commands (element) – also called "?".
\bb0p \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$	Series of two systems  symbols  and commands  The "world", an element of $\mathcal{D}(\mathcal{Y}; \mathcal{U})$ . Observations. Observations (element) – also called "sensel" Commands, in general. Commands (element) – also called "?". Number of sensels
\bb0p \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{n}$ $oldsymbol{v}$	Series of two systems  symbols  and commands  The "world", an element of $\mathcal{D}(\mathcal{Y}; \mathcal{U})$ . Observations. Observations (element) – also called "sensel" Commands, in general. Commands (element) – also called "?". Number of sensels Number of actuators
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \nobs \ncmd \obsSp	Geries  Bootstrapping  Observations of w y y u u ny nu y	Series of two systems  symbols  and commands  The "world", an element of $\mathcal{D}(\mathcal{Y};\mathcal{U})$ . Observations. Observations (element) – also called "sensel" Commands, in general. Commands (element) – also called "?". Number of sensels Number of actuators Observation space
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd \obsSp \cmdSp	Geries  Bootstrapping  Observations of w y y u u n n y n u y U	Series of two systems  symbols  and commands  The "world", an element of $\mathcal{D}(\mathcal{Y};\mathcal{U})$ . Observations. Observations (element) – also called "sensel" Commands, in general. Commands (element) – also called "?". Number of sensels Number of actuators Observation space Commands space
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd \cmde \nobs \ncmd \obsSp \cmdSp \cmdSph	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{n_{y}}$ $oldsymbol{n_{u}}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$	Series of two systems $ \frac{symbols}{and\ commands}                                    $
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd \obsSp \cmdSp	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{n_u}$ $oldsymbol{y}$ $oldsymbol{u}$	Series of two systems $\frac{symbols}{symbols}$ $\frac{and\ commands}{The\ "world",\ an\ element\ of\ \mathcal{D}(\mathcal{Y};\mathcal{U}).}$ $Observations.$ $Observations\ (element)\ -\ also\ called\ "sensel"}$ $Commands,\ in\ general.$ $Commands\ (element)\ -\ also\ called\ "?".$ $Number\ of\ sensels$ $Number\ of\ actuators$ $Observation\ space$ $Commands\ space$ $Commands\ space$ $Domain\ of\ a\ single\ actuator\ \mathcal{U}=\overline{\mathcal{U}}^{n_u}.$ $Domain\ of\ a\ single\ sensel\ \mathcal{Y}=\overline{\mathcal{Y}}^{n_y}.$
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd \cmde \nobs \ncmd \obsSp \cmdSp \cmdSph	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{n_{y}}$ $oldsymbol{n_{u}}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$	Series of two systems $ \frac{symbols}{and\ commands}                                    $
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd \obsSp \cmdSp \cmdSph \obsSph	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{n_u}$ $oldsymbol{y}$ $oldsymbol{u}$	Series of two systems $\frac{symbols}{and\ commands}$ The "world", an element of $\mathcal{D}(\mathcal{Y};\mathcal{U})$ . Observations. Observations (element) – also called "sensel" Commands, in general. Commands (element) – also called "?". Number of sensels Number of actuators Observation space Commands space Commands space Domain of a single actuator $\mathcal{U} = \overline{\mathcal{U}}^{n_u}$ . Domain of a single sensel $\mathcal{Y} = \overline{\mathcal{Y}}^{n_y}$ .
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd \obsSp \cmdSp \cmdSph \obsSph \obsSphd \obsSpd	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$	Series of two systems $\frac{symbols}{and\ commands}$ The "world", an element of $\mathcal{D}(\mathcal{Y};\mathcal{U})$ . Observations. Observations (element) – also called "sensel" Commands, in general. Commands (element) – also called "?". Number of sensels Number of actuators Observation space Commands space Domain of a single actuator $\mathcal{U} = \overline{\mathcal{U}}^{n_u}$ . Domain of a single sensel $\mathcal{Y} = \overline{\mathcal{Y}}^{n_y}$ . Metric on $d^{\overline{\mathcal{Y}}}$ Metric on $d^{\overline{\mathcal{Y}}}$
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd \obsSp \cmdSp \cmdSph \obsSph \obsSphd \obsSpd  common/boot/spatialsensors	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{\overline{u}}$ $oldsymbol{\overline{u}}$ $oldsymbol{\overline{u}}$ $oldsymbol{\overline{d}}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{\overline$	Series of two systems $\frac{symbols}{and\ commands}$ The "world", an element of $\mathcal{D}(\mathcal{Y};\mathcal{U})$ . Observations. Observations (element) – also called "sensel" Commands, in general. Commands (element) – also called "?". Number of sensels Number of actuators Observation space Commands space Domain of a single actuator $\mathcal{U} = \overline{\mathcal{U}}^{n_u}$ . Domain of a single sensel $\mathcal{Y} = \overline{\mathcal{Y}}^{n_y}$ . Metric on $d^{\overline{\mathcal{Y}}}$ Metric on $d^{\overline{\mathcal{Y}}}$
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd \obsSp \cmdSp \cmdSph \obsSph \obsSphd \obsSpd  common/boot/spatialsensors \obssp	$\oplus$ Series  Bootstrapping  Observations of w  y  y  u  u  n <sub>y</sub> $n_{u}$ $\overline{u}$ $\overline{u}$ $\overline{y}$ $d^{\overline{y}}$ $d^{\overline{y}}$ $d^{\overline{y}}$ $d^{\overline{y}}$ Spatial sensors $\mathcal{S}$	Series of two systems $ \frac{symbols}{symbols}                                    $
\bbOp \inSeries  common/boot  common/boot/obscmd  \world \obs \obse \cmd \cmde \nobs \ncmd \obsSp \cmdSp \cmdSph \obsSph \obsSphd \obsSpd  common/boot/spatialsensors	$\oplus$ Series  Bootstrapping  Observations of $oldsymbol{w}$ $oldsymbol{y}$ $oldsymbol{y}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{u}$ $oldsymbol{\overline{u}}$ $oldsymbol{\overline{u}}$ $oldsymbol{\overline{u}}$ $oldsymbol{\overline{d}}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{\overline{d}}$ $oldsymbol{d}$ $oldsymbol{\overline{d}}$ $oldsymbol{\overline$	Series of two systems $\frac{symbols}{and\ commands}$ The "world", an element of $\mathcal{D}(\mathcal{Y};\mathcal{U})$ . Observations. Observations (element) – also called "sensel" Commands, in general. Commands (element) – also called "?". Number of sensels Number of actuators Observation space Commands space Domain of a single actuator $\mathcal{U} = \overline{\mathcal{U}}^{n_{\mathcal{U}}}$ . Domain of a single sensel $\mathcal{Y} = \overline{\mathcal{Y}}^{n_{\mathcal{Y}}}$ . Metric on $d^{\overline{\mathcal{Y}}}$ Metric on $d^{\overline{\mathcal{Y}}}$

\imps	$Images(\mathcal{S})$	Images on physical space $S$ .
common/boot/servo	Servoing	
obsg	$\check{m{y}}$	Goal observations.
obsge	$\check{y}$	Goal observations (element).
obsgl	ž	Goal observations (element).
obsgle	ž	Goal observations (element).
		• • •
common/boot/abbreviations	Abbreviations	
\bbSpYU	$\mathcal{D}(\mathcal{Y};\mathcal{U})$	to write
\bbSpUY	$\mathcal{D}(\mathcal{U};\mathcal{Y})$	to write
\bbSpInvY	D*(y)	Representation nuisances on commands
\bbSpInvU	$\mathcal{D}^{\star}(\mathcal{U})$	Representation nuisances on observations
\bbSpInvYU	$\mathcal{D}^{\star}(\mathcal{Y};\mathcal{U})$	Representation nuisances
\bbSpInvUY	$\mathcal{D}^{\star}(\mathcal{U};\mathcal{Y})$	•
\bbSpCoreYU	$\mathcal{D}^{\circ}(\mathcal{Y};\mathcal{U})$	Systems up to representation
common/expressions	Miscellaneous exp	pressions
\etal	et. al.	-
\eg	e.g.,	•
\etc	etc.	
\ie	i.e.,	'
\ala	a la	
\viceversa	$vice\ versa$	'
\vs	vs	Versus
\adhoc	adhoc	versus
\apriori	$aanoc\ apriori$	
\aprioii	а рион	
common/goodformulas	Better formulas a	
		Explanation in formulas
$\left\{ \text{highA}\left\{ \ldots\right\} \right\}$		Highlight something in formulas (observations)
$\textstyle \highB\{\dots\}$		Highlight something in formulas (commands)
$\highC\{\ldots\}$		both observations and commands
common/yesorno	Miscellaneous fur	nctions for document formatting
\ns		
\tickYes	$\checkmark$	
\tickNo	7	
\NA	n/a	
\coltickNo	7	
\yes	./	
\no	7	
\onehalf		small one half
	$\frac{1}{2} + 1$	Small plus one
\smPO		-
\smMO	-1	Small minus one (e.g. in smallmatrix)
common/incomplete	Incomplete symbo	
		Marker for sections to write
\towrite	to write	Marker for sections to write
$\protect\pro$		A placeholder

$ ag{tocite}{\dots}$		
citeboh	[xxx]	
/xxx	???	
notsure	(Not sure)	
dontlike	(Don't like this	s)
\notformal	$(\mathbf{not} \ \mathbf{formal})$	,
ackslash		
\boh	???	incomplete
\bn		bad notation, this should change later
\checkbadformat		incomplete
\prooftowritesomeday		ı
\myrule{,}	fo. +1	ı
\unitInverval	[0, 1]	
common/geometry	Differential geom	etry
diff	Diff	Diffeomorphism
		$Diff(\mathcal{M})$ are the diffeomeorphisms from $\mathcal{M}$ to its
		\$\diff(\aset{M})\$ are the diffeomeorphisms from
		\$\aset{M}\$ to itself.
\diffPos	$Diff_+$	Orientation-preserving diffeomorphism.
\homeoPos	$Homeo_+$	Orientation-preserving homeomorphisms (of the
		Diffeomorphisms with bounded curvature
\diffVol	$Diff_{\mathrm{vol}}$	Difficultor principal with a second principal with a s
homeo	Homeo	Set of all homeomorphisms
\isometries	Isom	Isometries group
(150000111		$Isom(\mathcal{M})$ are all the isometries of $\mathcal{M}$ .
		\$\isom(\mathcal{M})\text{ are all the isometries of }\text{M}\)\$ are all the isometries of
		\$\aset{M}\$.
		Diffeomorphisms that fix a point
\conformalFuncs	Conformal	Conformal transformations
Conformati unes	Comormai	Comornia transformations
common/geometry/manifolds	Manifolds	
Sone	$\mathbb{S}^1$	Unit circle.
\Stwo	$\mathbb{S}^2$	Unit sphere.
\stwo	$\mathbb{S}^2$	Unit sphere
\hypsp	$\mathbb{H}$	
\hypspn	$\mathbb{H}^n$	l
common/groups	Group theory	l
gldentity	$\frac{e}{e}$	Identity of a group
\tgroup	group	Group set with operations
/ ° 0 r	0 1	$group(G, \cdot)$ means G is a group under $\cdot$ .
		\$\tgroup(\agroup\{G\},\cdot)\\$ means \$\agroup\{G\}\\$ is
		group under \$\cdot\$.
\haar	haar	Haar measure
/IIdat	IIaai	
		The Haar measure on $\mathcal{X}$ is haar.
		The Haar measure on $\scriptstyle x \in X$ is $\scriptstyle x \in X$ .
common/groups/famous	Famous groups	
\idGroup	Id	The trivial group with identity only.
/IddI oap	14	The divide Stoup with Identity only.

$\operatorname{\mathtt{permutations}}$	Perm	Set of permutation Stabilizer of a set
$\setminus functionsym\{\ldots\}$		Symmetries of a function
\allsubgroups	AllSubgroups	
$\setminus \text{comgroup}\{\ldots\}$		Commutator sub group
\groupJoin	V	Group join
$\groupconj\{\ldots\}$		Conjugation
\groupquotient		Group quotient
\groupsemidir	$\rtimes$	Semidirect product.
\groupisom	$\cong$	Isomorphism
\issubgroup	$\leq$	Subgroup relation.
\normalsub	◁	Normal subgroup relation
\actionsymbol	•	Group action.
$\setminus \mathtt{companionFuncs}\{\ldots\}$		Companions functions
$ ag{transversalFuncs} \{ \dots \}$		Transversal functions
	Matrin anguna	
common/groups/matrix	Matrix groups	0
\orthogroup	0	Orthogonal group.
\transroup	T	Translation group
\segroup	SE	Special Euclidean group.
Egroup	E	Euclidean group.
SLgroup	SL	Special linear group
Diaggroup	D	Diagonal matrices with non-zero elements.
PMgroup	$D_\pm$	Diagonal matrices with $\pm 1$ on the diagonal.
Scalegroup	Sc	Multiples of the identity
\sogroup	SO	Special orthogonal group.
\soneggroup	SO <sup>-</sup>	
\affgroup	Aff	Affine group
\affgrouppos	$Aff_+$	Affine group
$\GL$	GL	General linear group
\GLpos	$GL_+$	
\se	se	Special Euclidean algebra
\soalgebra	SO	
\sealgebra	se	Special Euclidean algebra
sothree	SO(3)	Special orthogonal group (rotation matrices)
sethree	$\widetilde{\mathrm{SE}(3)}$	Special Euclidean group
setwo	$\widetilde{\mathrm{SE(2)}}$	Special Euclidean group
	17 . 1	
common/groups/simple	Very simple groups	
mgroup	$(\mathbb{R}_{\circ}, \times)$	Multiplication group
mposgroup	$(\mathbb{R}^+_{\circ}, \times)$	Positive multiplication group
mpmgroup	$(\pm 1, \times)$	+1/-1 multiplication group
\addgroup	$(\mathbb{R},+)$	Addition group
common/groups/simple/abbreviations	Abbreviations	
\addgroupn	$(\mathbb{R}^n,+)$	Addition group on $\mathbb{R}^n$
affone	$Aff(\mathbb{R})$	Affine group 1D
affonepos	$Aff_+(\mathbb{R})$	Affine group 1D
affn	$Aff(\mathbb{R}^n)$	Affine group in $n$ dimensions.
\affnpos	$Aff_+(\mathbb{R}^n)$	Affine transformations preserving orientations.
1 E 1 1 1 1	- ( )	r

common/probability	Probability	
\uniformdist	Uniform	Uniform distribution
\measuresupport	Support	Support of a probability measure
\processes	StocProcesses	Set of stochastic processes
\conditional	Conditional	Conditional distribution
		Conditional $(\mathcal{B}; \mathcal{A})$ is the set of conditional distribution
		tions $(\mathcal{D},\mathcal{A})$ is the set of conditional distributions
		<pre>\$\conditional(\setB;\setA)\$ is the set of conditi</pre>
\finaldigt	Final	distributions  Ctationary distribution of a stachastic process
\finaldist		Stationary distribution of a stochastic process.
\measureSp	meas	Measure space.
		$\operatorname{meas}(\mathfrak{X}, \Sigma, \mu)$ is a measure space.
		$\mbox{$\$
\probSp	prob	Probability space.
		$prob(\mathfrak{X}, \Sigma, \mu)$ is a probability space.
		<pre>\$\probSp(\aset{X},\Sigma,\mu)\$ is a probability</pre>
		space.
measures	ProbMeasures	Set of probability measures on a set.
		$\operatorname{Try} \mu^{\mathcal{X}} \in ProbMeasures(\mathcal{X})$
		Try $x = 1$ Try $x = X$ in $x = X$
\ d:	2	11y ψ/mu[/αset[κ]] /1n /measures(/aset[κ])ψ
\dirac	$\delta$	
common/robotics	Robotics	
obsip	$\overline{m}$	Inner product bilinear form.
\obsosp	O	Observation output space.
\dummySensel	s	o sser ration output space.
\pose	q	Robot pose $q = (t, \mathbf{R}) \in \mathcal{Q} \subset SE(3)$ .
\posesp	Q	Pose space, subgroup of SE(3).
\confspace	Q	Robot configuration space
\pos	$\widetilde{t}$	Position in the world frame.
\rotm	${f R}$	Rotation matrix representing orientation in the
\lvel	v	Linear velocity
\lvele	$\overline{v}$	Linear velocity (element)
\avel	$oldsymbol{\omega}$	Angular velocity (as vector)
\avels	$\omega$	Angular velocity in 2D (scalar)
avelse	$\hat{oldsymbol{\omega}}$	Angular velocity (as skew-symmetric matrix)
\njoints	$n_j$	Number of joints in a robot
\attitude	$\mathbf{R}^{n_j}$	1. dilloot of Johnson III a 10000
\position	t	
(Position	· ·	
common/robotics/fieldsmapler	$Field\ samplers$	
\field	$\mathcal{F}$	Field sampled by the field sensor.
\fieldpos	z	Generic position in the world.
common/robotics/old	Deprecated	
\wshape	s	
\wpose	$\stackrel{\circ}{p}$	
\worldsp	Maps	
\wshapesp	Shapes	
/	Shapes	

common/robotics/maps	$New \ stuff$	
\mshape	s	Map shape.
\mpose	$oldsymbol{p}$	Map pose.
\mshapesp	Shapes	Shape space.
\mapsp	Maps	Maps set Maps = Shapes $\times$ SE(3).
	·	• • • • • • • • • • • • • • • • • • • •
common/statistics	Misc statistics	
\stddev	std	Standard deviation
\var	var	Variance
\ex	$\mathbb{E}$	Expected value
\corr	corr	
COV	$\operatorname{cov}$	covariance
\spearcorr	spear	Spearman correlation between two variables
\mutualinf	${\cal I}$	Mutual information
\entr	${\cal H}$	Entropy
\varinf	${\cal V}$	Variation of information
\varinfn	$\mathcal{V}_1$	Normalized variation of information
$\operatorname{pushedforward}\{\ldots\}$		Pushed forward notation
\distributedAs	~	Distributed as
common/statistics/sorting	Sorting vectors	
\order	order	Order (or rank) of the elements of a vector.
\sorted	sorted	Sorted version of a vector
\differ	differ	Sorted version of a vector
\sortedSeq	sortedSeq	
\weaksortedSeq	weaksortedSeq	
common/systems	Dynamical systems	
\CTI	CTI	Continuous-time time-invariant systems.
\DTI	DTI	Discrete-time time-invariant systems.
\DDTI	DDTI	Deterministic discrete-time time-invariant system
\DCTI	CDTI	Deterministic continuous-time time-invariant sys
\DFSTI	DFSTI	Discrete-time finite-state-space time-invariant sy
\CFSTI	CFSTI	Continuous-time finite-state-space time-invariant
\DFSTIGO	DFSTIGO	Discrete-time finite-state-space time-invariant sy
\CLTI	CLTI	Continuous-time linear time-invariant systems
CLTIG	CLTIG	Continuous-time linear time-invariant systems w
\DLTI	DLTI	Discrete-time linear time-invariant systems
\DSMPLTI	DSMPLTI	Discrete-time stable minimum-phase linear time
\DLTIG	DLTIG	Discrete-time linear time-invariant systems with
\laptrans	$\mathcal{L}$	Laplace transform
\impulseresp	L ImpulseResp	Impulse response of a system
\transferfunc	TF	Transfer function
,		
+		
typography	Basic typograph	
	Basic typograph	All acronyms; good for text as well as math mod
<pre>  typography/tensors</pre>	Basic typograph  Tensors and ten	All acronyms; good for text as well as math modes and all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as math modes are all acronyms; good for text as well as a superior and acronyms; good for text as well as a superior acronyms; good for text as a superior acronyms; good for text are all acronyms; good for text as a superior acronyms; good for text are all acro
$\mbox{\ensuremath{\mathtt{myacronym}}\{\dots\}}$		All acronyms; good for text as well as math mod
<pre>  typography/tensors</pre>		All acronyms; good for text as well as math modes and all acronyms are dements

typography/matrices	Matrices and matrix elements	
$ackslash M\{\ldots\}$		A matrix
ackslash		The elements of a matrix
typography/sets	Sets	
$\setminus \mathtt{aset}\{\dots \}$		A set
$\operatorname{agroup}\{\ldots\}$		Fonts for a set which is a group.
		A set $X$ , a group $X$ , $G$ ,
		A set $x$ , a group $\alpha X$ , \$\agroup{X}\$, \$\agroup{X}\$
		\dots
$aseq{}$		Formatting for sequences
		Formatting for one element in a sequence
dummyIndices		
typography/misc	Everything else	
$\mathtt{aword}\{\ldots\}$		How words should look like in formulas.
		Consider the operator scale,
		Consider the operator $\alpha \$
$\mathbf{vmath}\{\ldots\}$		How words should appear in math mode.