\agSp	Agents and task	S
/ggpb	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	$success_{A}^{\mathcal{G}}$	Success set for the agent \mathcal{A} and goal \mathcal{G} .
\agRep	$m{m}$	Agent representation
\agRepSp	\mathfrak{M}	Agent's model space
\agNuis		0
\agNuisComp	G_{-}^{\perp}	Complement of $G_{\mathcal{A}}$.
\agNuisObs	$G^{\mathcal{Y}}$	complement of $\alpha_{\mathcal{A}}$.
\agNuisCmd	$G^{\mathcal{A}}$	
\agbbClass	$G_{\mathcal{A}}$	
\agbbClCore	$C^{\mathcal{A}}$	
\agGoal	$egin{array}{c} \mathrm{G}_{\mathcal{A}} \ \mathrm{G}_{\mathcal{A}}^{\downarrow} \ \mathrm{G}_{\mathcal{A}}^{arphi} \ \mathrm{G}_{\mathcal{A}}^{arphi} \ C_{\mathcal{A}} \ C_{\mathcal{G}}^{0} \ \mathcal{G}_{\mathcal{A}}^{0} \ \mathcal{G}_{\mathcal{A}}^{0} \end{array}$	The agent's goal (a subset of $StocProcesses(\mathcal{Y} \times$
\agG0a1	g	The agent's goal (a subset of Stocrocesses(3 x
articles		
articles/bds	$BDS\ report$	
\BDSnk	BDS(n;k)	
\bgBDSfamily	BDS	Family of BDS sensors
\bds	BDS	Bilinear dynamics system
\BDS	BDS	
$\operatorname{omsum}\{\ldots\}$		omitted sum
	T	Learned tensor
TT	T T	
\TT \TTe	Т	Learned tensor
\TTE \TTe \TP	Т Р	Learned tensor
\TT \TTe \TP	T P P	Learned tensor ?
\TT \TTe \TP \TPe	T P P U	Learned tensor Learned tensor
\TTT \TTE \TP \TPe \TU \TUe	T P P U U	Learned tensor Learned tensor Learned tensor
\TT \TTe \TP \TU \TU \TUE	T P U U M	Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics
\TT \TTe \TPe \TU \TUe \TM	T P U U M M	Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Bilinear tensor in BDS dynamics
\TT \TTe \TPe \TU \TUe \TM \TMe \TN	T P P U U M M	Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Bilinear tensor in BDS dynamics Bilinear tensor in BDS dynamics
\TTT \TTTe \TPP \TPP \TUU \TUU \TUUE \TM \TME \TN \TNE	T P P U U M M M	Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics
\TTT \TTE \TPP \TPe \TU \TUe \TM \TMe \TN \TNe \TNe	T P U U M M M N P	Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y.
\TT \TTe \TP \TPe \TU \TUe \TM \TMe \TNE \TNCOV	T P U U M M M N P	Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y. Covariance of y.
TTT TTE TP TPe TU TUe TM TMe TN TNe Tcove Tcove Tucov	T P U U M M M N P P	Learned tensor ? Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y. Covariance of y. Covariance of y.
TTT (TTe (TP) (TPe (TU) (TUe (TM) (TMe (TN) (TNe (Tcove (Tcove (Tucove) (Tucove	T	Learned tensor Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y.
TTT TTE TP TPe TU TUe TM TMe TN TNe Tcov Tcove Tucov Tucove	T P P U U W M M N N P P Q Q Q T	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
TTT TTE TP TPe TU TUe TM TMe TN TNe Tcove Tcove Tucove	T	Learned tensor Learned tensor Learned tensor Bilinear tensor in BDS dynamics Covariance of y.

\bgds	BGDS	Bilinear gradient dynamics system
\BGDS	BGDS	Diffical gradient dynamics system
\bgCmd	$oldsymbol{u}$	commands
\bgCmdH	$oldsymbol{u}^{\mathbb{T}}$	commands history
\bgCmdF \bgCmdSp	u U	commands instory commands space
\bgWorld	W	World
, –	\mathcal{W}	
\bgWorldSp	VV	World space $W \in \mathcal{D}(\mathbb{T}, \mathcal{U}, \mathcal{Y})$
		<pre>\$\bgWorld \in \bgRSSp(\bgTime, \bgCmdSp, \bgObsSp</pre>
\bgAgent	agent	Agent
\bgAgentEx	learn	Agent exploration
\bgAgentAc	act	Agent action
\bgAgentRep	$m{r}$	Agent representation
\bgAgentRepSp	${\mathcal R}$	Agent representation space
\bgAgentSp	Agents	Agent action
\bgCmdTr	$oldsymbol{g}$	Transformation of the commands
\bgCmdTrSp	G^{u}	Transformation of the community
\bgObsTr	$\overset{\hookrightarrow}{h}$	Transformation of the observations
\bg0bsTrSp	$^{\prime\prime}_{ m G^y}$	Transformation of the observations
\bgSamplingGroup	Sampling	Groups of sampling operations
\bgCalibration	Calib	Calibration operation
\bgBDSagent	A_{BDS}	The BDS agent
\bgBGDSagent \bgBGDSagent	A_{BGDS}	The BGDS agent The BGDS agent
\bgPopCode		Popoulation code
\bgRankCode	pop rankcode	Rank code
, 0	RF	
\bgRangeFamily		Family of range-finders models
\bgCmdConstraints	$arOlimits_{oldsymbol{u}}$	
\bgPopK	ψ	
articles/bgds/old	$BGDS\ report$	
\state	$oldsymbol{x}$	Generic underlying state.
\detecte	d	Detector
$\setminus submean\{\dots\}$		Quantity with mean normalized.
\dist	σ	Distance to obstacle
\distn	σ^*	Distance to obstacle, mean normalized.
\rfnl	eta	Nonlinear function in range-finder tensors.
\near	μ	Nearness
\lum	y	Luminance
lumn	y^*	Luminance, mean normalized
\sptran	ℓ	Sensor pose (translation)
\sprot	$\ell_{m{ heta}}$	Sensor pose (rotation)
\slvel	$oldsymbol{v^s}$	Sensor linear velocity (when off axis)
\save1	ω^s	Sensor angular velocity (when off axis)
\TX	X	Generic metric
\TXe	X	Generic metric
\OS	S	$S = s \times \nabla$
\convf	$\overset{\sim}{f_*}$	Indicates the convolution with a kernel f .
\my	m^{j*}	Metric on the tangent space of $y(s)$.
	,,,	in the tangent space of $g(s)$.
\bgBGDSfamily	BGDS	Family of BGDS sensors
\BGDSsk	$BGDS(\mathcal{S};k)$	
/200017	$DODO(O, \kappa)$	

\	Γ	D: 1 1
\focal	F	Pinhole camera focal length.
\traindist	p_{T}	Training distribution.
\trainsym	$Sym(p_{\mathrm{T}})$	Symmetry group of $p_{\rm T}$.
articles/bgds/logical	Gradient dyne	amics
\obslsp	Z	Observation logical space
\obsl	$oldsymbol{z}$	Observations in logical space
obsle	z	Observation logical space element
xtos	arphi	Mapping between S and Z .
\jac	Ĵ	Jacobian of φ
\jace	J	An element of the Jacobian of φ .
\mz	μ	Metric on the tangent space of $z(x)$.
mmu	\dot{M}	Metric for the commands u .
ontiolog/bedg/logical/emoda	Condient dam	amia.
articles/bgds/logical/grads	Gradient dyne	
\Tzgd	L I	z gradient dynamics
\Tzgde	L Na	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	E	Affine part of dynamics (element)
\Tzal	F	Learned affine part of dynamics.
\Tzale	F	Learned affine part of dynamics (element)
articles/bgds/tensors	$BGDS\ report$	
\Tygd	G	\boldsymbol{y} gradient dynamics
\Tygde	G	\boldsymbol{y} gradient dynamics (element)
\Tygl	Н	$m{y}$ gradient learned tensor
\Tygle	Н	$m{y}$ gradient learned tensor (element)
\Tygcov	R	$m{y}$ gradient covariance
\Tygcove	R	$m{y}$ gradient covariance (element)
\Tyad	В	Affine part of dynamics.
\Tyade	В	Affine part of dynamics (element)
\Tyal	С	Learned affine part of dynamics.
\Tyale	С	Learned affine part of dynamics (element)
articles/bgds/models/deprecated	Definition of	random models
bgTime	\mathbb{T}	Time axis
\bgRS	D	Random model
\bgRSSp	$\mathfrak D$	All models
\bgRSinput	\boldsymbol{a}	Input signal
\bgRSinputSp	$\mathcal A$	1 0
\bgRSinputH	$\boldsymbol{a}^{\mathbb{T}}$	History of input signal
\bgRSoutput	\boldsymbol{b}	1 0 "
\bgRSoutputH	$\boldsymbol{b}^{\mathbb{T}}$	History of output signal
\bgRSoutputSp	B	
\bgRSinputTr	$oldsymbol{g}$	
\bgRSinputTrSp	$\mathrm{G}^{\mathcal{A}}$	
\bgRSoutputTr	$\overset{\hookrightarrow}{h}$	
/ · O	• •	

\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	$\mathrm{G}^{\mathfrak{B}}$	
\bgRSoutputTrSp		observations
\bg0bs \bg0bsH	$oldsymbol{y} oldsymbol{y}^{\mathbb{T}}$	observations observations history
\bg0bsSp	$oldsymbol{y}^{-}$	observations instory observation space
\pgubs5p	ð	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	A subset of M XXX
\infr	infr	Informative radius
\ffr	infr(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	$e_{\sf iso}$	
symError	e_{sym}	
\relError	e_{r}	
\scaledRelError	$e_{\sf sr}$	
angcorr	$ ho_{ heta}$	
\spearperf	$ ho_{ m sp}$	Spearman performance measure
\spearperfn	$ ho_{ m sp}^{ m sp}$	Normalized Spearman performance measure
dirset	S	Set of directions
\dirmat	\mathbf{S}	Directions stacked in a matrix
\matX	\mathbf{X}	
\matI	I	
\arot	$\ddot{\mathbf{X}}$	
cosmat	$\overset{-1}{\mathbf{C}}$	
\cosmatij	C_{ij}	
\distmat	\mathbf{D}^{ij}	
\distmatij	D_{ij}	
\simmat	$\overset{D_{ij}}{\mathbf{Y}}$	Similarity matrix
\simmatij	Y_{ij}	Similarity matrix
\simmatii	$\overset{1}{\mathrm{Y}}_{ii}$	
\simmatl1 \simmatkl	$\stackrel{_{1}}{\mathrm{Y}}_{kl}$	
\algorparam		
	$\gamma \ \mathrm{H}$	
\shannon		field of view
\fov	FOV SK	
\SKalgo		Shepard-Kruscall algorithm
\SBSEw	SKv + w	An extension to the SK algorithm
\SBSE	SKv	An extension to the SK algorithm (without warp
articles/dds	$DDS\ report$	
ddsres	ρ	Resolution of the sensor in a DDS.
ddsarea	$ \mathcal{S} $	Area of the manifold \mathcal{S} .
ddsbound	$d_{ m max}$	Bound on the maximum diffeomorphism in a DD
DDS	DDS	-
1		

\dds	DDG	
\dds\	DDS DDSL	
\DDSsu	$DDSL$ $DDS(\mathcal{S};\mathcal{U})$	
\DDSSu\ \DDSLsvu	· · /	
\bgDDSfamily	$DDSL(\mathcal{S},\mathcal{V};\mathcal{U})$ DDS	
\bgDDSIamily \bgDDSLfamily	DDSL	
v e	%% DD2F	Model
\diffeoURL		Model
\cmdAlphabet	\mathcal{U}	NT 1 C 11-
ncmdwords	$ \mathcal{U} $	Number of commands words.
\obsspD	d^{S}	Metric on \mathcal{S} .
\diffId	$Id_\mathcal{S}$	Identity diffeomorphisms.
\diffU	Γ	Uncertainty of estimated diffeomorphism.
diffDist	d^{Diff}	Distance between two diffeomorphism.
\cmdDist	$\mathcal{D}_{\mathrm{cmd}}$	Distance between two commands.
\cmdADist	$\mathcal{A}_{\mathrm{cmd}}$	Anti-distance between two commands.
\images	$\mathbb{F}(\mathcal{S})$	
\ddsfov	\mathcal{V}	Field of view for DDS
articles/estgroups	$Estimation\ with$	symmetries
articles/estgroups/state	State	
\\esSt	$\frac{z}{x}$	State
\esStDim	n = n	Dimension of state space
\esStSp	$\overset{n}{\mathfrak{X}}$	State space
\esStSp \esStDist	$\mu^{\mathfrak{X}}_{m{x}}$	Prior for state
(65565750	$F^{\omega}x$	1 1101 101 50000
	01	
articles/estgroups/observations	Observations	01
\es0bs	y	Observations
\esObs \esObsDim	$oldsymbol{y}{m}$	Observations dimensions
\esObs \esObsDim \esObsSp	y m y	Observations dimensions Observations space
\esObs \esObsDim	$oldsymbol{y}{m}$	Observations dimensions Observation space Observation map
\esObs \esObsDim \esObsSp	y m y	Observations dimensions Observations space Observation map $y = nh(x)$
\esObs \esObsDim \esObsSp	y m y	Observations dimensions Observations space Observation map
\esObsDim \esObsMap \esObsMap articles/estgroups/nuisances	y m y	Observations dimensions
\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis	$egin{array}{c} oldsymbol{y} & m & & & \\ oldsymbol{y} & h & & & \\ \hline & Nuisances & & & \\ oldsymbol{n} & & & & \\ \hline & oldsymbol{n} & & \\ \hline & & & \\ \hline & oldsymbol{n} & & \\ \hline & & & \\ \hline & oldsymbol{n} & & \\ \hline & & & \\ \hline & \\ \hline & & \\ \hline & \\ \hline & & \\ \hline \\ \hline$	Observations dimensions
\esObs\ \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp	$egin{array}{c} oldsymbol{y} & m & & & & \\ oldsymbol{y} & h & & & & \\ \hline & Nuisances & & & & \\ \hline oldsymbol{n} & & & & & \\ oldsymbol{N} & & & & & \\ \hline oldsymbol{N} & & & & & \\ \hline \end{array}$	Observations dimensions Observations space Observation map $y = nh(x)$ $ v = nh(x) $ $ v =$
\es0bsDim \es0bsSp \es0bsMap articles/estgroups/nuisances \esNuis	$egin{array}{c} oldsymbol{y} & m & & & \\ oldsymbol{y} & h & & & \\ \hline & Nuisances & & & \\ oldsymbol{n} & & & & \\ \hline & oldsymbol{n} & & \\ \hline & & & \\ \hline & oldsymbol{n} & & \\ \hline & & & \\ \hline & oldsymbol{n} & & \\ \hline & & & \\ \hline & \\ \hline & & \\ \hline & \\ \hline & & \\ \hline \\ \hline$	Observations dimensions Observations space Observation map $y = nh(x) $
\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators	$egin{array}{c} oldsymbol{y} & m & & & & & \\ oldsymbol{y} & h & & & & & \\ \hline & Nuisances & & & & & \\ \hline & oldsymbol{n} & & & & & \\ oldsymbol{N} & & & & & & \\ oldsymbol{\mu}_{oldsymbol{n}}^{\mathrm{N}} & & & & & \\ \hline & Estimators, \ risk. \end{array}$	Observations dimensions Observations space Observation map $y = nh(x)$ $y = nh(x)$ $v = n$
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators \esEst</pre>	$egin{array}{c} oldsymbol{y} & m & \ oldsymbol{y} & \ h & \ & \ & \ & \ & \ & \ & \ & \ &$	Observations dimensions Observations space Observation map $y = nh(x)$ $y = nh(x)$ $ x = 0 = \text{Nuis } (es0bsMap(esSt))$ Nuisance Nuisance Nuisance group Nuisance distribution $x = x \text{ and performances}$ Estimator
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators \esEst \esEstSp</pre>	$egin{array}{cccc} oldsymbol{y} & m & & & & & & & & & & & \\ oldsymbol{y} & h & & & & & & & & & & & \\ \hline & N & & & & & & & & & & & & & & & \\ \hline & oldsymbol{n} & & N & & & & & & & & & & & \\ \hline & oldsymbol{n} & & N & & & & & & & & & & & & & \\ \hline & oldsymbol{n} & & N & & & & & & & & & & & & & \\ \hline & oldsymbol{n} & & & N & & & & & & & & & & & \\ \hline & oldsymbol{n} & & & & & & & & & & & & & & \\ \hline & oldsymbol{n} & & & & & & & & & & & & & \\ \hline & oldsymbol{n} & & & & & & & & & & & & \\ \hline & oldsymbol{n} & & & & & & & & & & & & \\ \hline & & & & & &$	Observations dimensions Observations space Observation map $y = nh(x)$ $y = nh(x)$ $ x = \text{VesNuis } \text{VesObsMap}(\text{VesSt}) $ Nuisance Nuisance group Nuisance distribution $x \text{ and performances}$ Estimator Estimator set
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators \esEst \esEstSp \esEstSp \esEstSpOpt</pre>	$egin{array}{c} oldsymbol{y} & m & \ oldsymbol{y} & \ h & \ & \ & \ & \ & \ & \ & \ & \ &$	Observations dimensions Observations space Observation map $y = nh(x)$ $y = nh(x)$ $ x = \text{VesNuis } (\text{esObsMap}(\text{esSt})) $ Nuisance Nuisance group Nuisance distribution $x \text{ and performances}$ Estimator Estimator set Optimal subset of estimators
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators \esEst \esEstSp \esEstSpOpt \esRisk</pre>	$egin{array}{cccccccccccccccccccccccccccccccccccc$	Observations dimensions Observations space Observation map $y = nh(x)$ $y = nh(x)$ $v = nh(x)$ Nuisance Nuisance Nuisance group Nuisance distribution $v = nh(x)$ Substitution $v = nh(x)$
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators \esEst \esEstSp \esEstSpOpt \esRisk \esRiskSp</pre>	$egin{array}{c} oldsymbol{y} & m & \ oldsymbol{y} & h & \ \hline & Nuisances & \ oldsymbol{n} & \ N & \mu^{ m N}_{oldsymbol{n}} & \ Estimators, \ risk. & \ m & \ \mathcal{M} & \ \mathcal{M}^{\star} & \end{array}$	Observations dimensions Observations space Observation map $y = nh(x)$ $y = nh(x)$ $v = n$
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators \esEst \esEstSp \esEstSpOpt \esRisk \esRiskSp </pre>	$egin{array}{c} oldsymbol{y} \\ m \\ oldsymbol{y} \\ h \\ \hline & N \\ \mu_{oldsymbol{n}}^{\mathrm{N}} \\ & oldsymbol{\mu}_{oldsymbol{n}}^{\mathrm{N}} \\ & Estimators, \ risk. \\ \hline & m \\ \mathcal{M} \\ \mathcal{M}^{\star} \\ & e \\ \mathcal{E} \end{array}$	Observations dimensions Observations space Observation map $y = nh(x)$ $y = nh(x)$ $v = nh(x)$ Nuisance Nuisance Nuisance group Nuisance distribution $v = nh(x)$
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators \esEst \esEstSp \esEstSp\ \esEstSp\ \esRiskDistPO</pre>	$egin{array}{c} oldsymbol{y} \\ m \\ oldsymbol{y} \\ h \\ \hline & N \\ \mu_{oldsymbol{n}}^{\mathrm{N}} \\ & oldsymbol{\mu}_{oldsymbol{n}}^{\mathrm{N}} \\ & Estimators, \ risk. \\ \hline & m \\ \mathcal{M} \\ \mathcal{M}^{\star} \\ & e \\ \mathcal{E} \end{array}$	Observations dimensions Observations space Observation map \[y = nh(x) \] \[\structure = \le \structure \le
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators \esEst \esEstSp \esEstSpOpt \esRisk \esRiskSp </pre>	$egin{array}{cccccccccccccccccccccccccccccccccccc$	Observations dimensions Observations space Observation map \[y = nh(x) \\ \sequential \text{VesObs} = \\ \cert{esNuis} \\ \cert{esObsMap}(\\ \cert{esSt}) \\$ \] Nuisance Nuisance group Nuisance distribution \[\text{s} \] \ and performances \[\text{Estimator} \\ \text{Estimator} \\ \text{Estimator} \\ \text{Optimal subset of estimators} \\ \text{Risk function} \\ \text{Risk space} \\ \text{Risk distribution for given estimator} \]
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators \esEst \esEstSp \esEstSp\ \esEstSp\ \esRiskDistPO</pre>	$egin{array}{c} oldsymbol{y} \\ m \\ oldsymbol{y} \\ h \\ \hline & N \\ \mu_{oldsymbol{n}}^{\mathrm{N}} \\ & oldsymbol{\mu}_{oldsymbol{n}}^{\mathrm{N}} \\ & Estimators, \ risk. \\ \hline & m \\ \mathcal{M} \\ \mathcal{M}^{\star} \\ & e \\ \mathcal{E} \end{array}$	Observations dimensions Observations space Observation map \[y = nh(x) \\ \square \text{\esnuis \esnubsMap(\esst)} \\ \] Nuisance Nuisance group Nuisance distribution \[s \text{ and performances} \] Estimator Estimator Estimator set Optimal subset of estimators Risk function Risk space Risk distribution for given estimator Partial order defining preference on distributions Estimation problem
<pre>\esObs \esObsDim \esObsSp \esObsMap articles/estgroups/nuisances \esNuis \esNuisSp \esNuisDist articles/estgroups/estimators articles/estgroups/estimators \esEst \esEstSp \esEstSpOpt \esRiskDistFO \esProb</pre>	$egin{array}{cccccccccccccccccccccccccccccccccccc$	Observations dimensions Observations space Observation map \[y = nh(x) \\ \square \text{\esnuis \esnubsMap(\esst)} \\ \] Nuisance Nuisance group Nuisance distribution \[s \text{ and performances} \] Estimator Estimator Estimator set Optimal subset of estimators Risk function Risk space Risk distribution for given estimator Partial order defining preference on distributions Estimation problem

\esStAbSp	$\mathcal A$	Abstract space
\esRep	arphi	Representation
		$arphi:x\mapsto lpha.$
\		\$\esRep: \esSt \mapsto \esStAb\$.
\esStSym	A	Group of symmetries of the state
\es0bsSym	В	Group of symmetries of the observation
\esRiskSym	$\stackrel{ ext{C}}{\sim}$	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	1
\gsEqs	EqSet	Fixed points of a function.
\gsGA	GrAct	If the function is the action of a group.
\gsGAsym		Used to specify that a function can be expressed
\gsSym	$\overset{\shortparallel}{\mathrm{Sym}}$	Set of symmetries
\gsStrongCan	SCan	Strong canonization operator
\gsWeakCan	WCan	Weak canonization operator
\gsEquiCan	BCan	Bold canonization operator
\gsEndoCan	MCan	-
10		Mild canonization operator
\gsUnCan	UCan	Unstructured canonization operator
\gsNuis	Sample	
regular	regular	
\unstr	~	Unstructured symbol.
\jokFunc	*	Joker function
\zerFunc	0	Zero function
articles/groupspectral/defs	Group spectral	properties
\gsdContravariant	$\xrightarrow{-1}$	Contravariance
\gsdInvariant	$\xrightarrow{0}$	Invariance
\gsdEquivariant	$\overset{Id}{\longrightarrow}$	Equivariance
\gsdIntroduces	*	Nuisance introduced
\gsdUnstructured	$\overset{\sim}{\longrightarrow}$	Unstructured result
articles/invariances	Invariances	Dual of a management time main and
		Dual of a representation nuisance
articles/soattotheory	Symbols used by	y Soatto
scene	ξ	scene
\representation	ξ ξ̂ φ	representation
\minrep	$\hat{\xi}^{\vee}$	minimal representation
\feature	$\overset{\circ}{\phi}$	feature
\maxinv	ϕ^{\wedge}	maximal invariant feature
\suffstat	$\overset{'}{\phi}\vee$	maximal invariant feature
\image	$\overset{arphi}{\mathcal{I}}$	image
\addnoise	$\frac{\mathcal{L}}{n}$	additive noise
\imageform	$\overset{n}{h}$	image formation function
\groupnuis		nuisance which have the structure of a group
\othernuis	$rac{g}{ u}$	other non-invertible nuisance
		OUTCL HOH-HIVELUIDIC HUISAHCE

\lightfield	${\cal L}$	all possible images generated by a scene
complex	H	Complexity measure
\actinfo	\mathcal{H}	Actionable information
\covdet	ψ	Covariant detector
Covaet	ψ	Covariant detector
articles/soattotheory/mseerep	$msee\ report$	
		Domain sampling operator (subset)
$ \text{nusample} \{ \dots \} $		Domain sampling operator (subset)
		Value Discretization operator (subset)
		Smoothing operator (kernel)
		Censoring operator (field of view)
		Occlsions
\imform	I	Coolida
\contrast	f	
Constass	J	
articles/thesis	Special symbols for	or thesis
labelrefinement	ref	Indicates a refinement
\pchomeoR	$PieceHomeo(\mathbb{R})$	
	()	used in properties 1.dot
		1 1
\bitZ		
\bit0		
\infbinstrings	$\{\Box, \boxdot\}^{\mathbb{N}}$	Set of infinite binary strings
\chineseClose	(nosummary)	The Chinese character corresponding to "close"
1		The Chinese character corresponding to close
\twosignals	y^i, y^j	
\twosignalsa	y_{i}^{i}	
twosignalsb	y_{i}^{j}	
\twosignalscolon	$y^i; y^j$	
\semrelorder	m	Order of a generic semantic relations
\infinit	d	Infinitesimal
\genericsemrel	${\cal R}$	A generic semantic relation.
\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	$oldsymbol{u}^{\star}$	The optimal command
cmdnop	u^{nop}	Command corresponding to "resting".
rew	R	Reward function
\placeneig	Neighbors	
\genericrel	~	Generic relation
\notgenericrel	<i></i> ~	
/	/	
articles/thesis/longexample	Long example	
\CalibA	CalibA	
\CalibB	CalibB	
\Smoothkernel	k	
\Smooth	$Smooth_k$	
BGDSAg	BGDSagent	
BGDSAgS	BGDSagentS	
\DImagesU	$\mathfrak{D}(Images(\mathcal{S});\mathcal{U})$	
\DImagesR	$\mathcal{D}(Images(\mathcal{S}); \mathbb{R}^{n_u})$	·)
, 0	(- 0 - (- /)	<i>'</i>

\ABehavior	behavior	
\DImagesSphU	$\mathfrak{D}(Images(\mathbb{S}^2); \mathfrak{l})$	$\mathcal{L})$
hobs	$oldsymbol{x}$,
hobse	x	
bound	M	
common	Common symbo	ols to all papers
common/abbreviations	Other abbrevata	ions
\setA	\mathcal{A}	
\setB	${\mathcal B}$	
\setC	C	
\setU	\mathfrak{U}	
\setM	${\mathfrak M}$	
\setY	y	
\setX	\boldsymbol{x}	
\setZ	\mathcal{Z}	
\setS	S	
\grG	G	
\grH	Н	
\grK	K	
\grN	N	
common/abbreviations/invariances	s/abbreviations $oldsymbol{a}$	
\sqae	a	
\sqb	\boldsymbol{b}	
\sqbe	b	
\sqc	$oldsymbol{c}$	
\sqce	c	
common/acronyms	A cronyms	
common/algebra	Algebra	
\ones	1	
\idMat	I	Identity matrix
\matTrace	Tr	Trace of a matrix.
\angleFun	_	Angle function
\flatten	vec	Matrix-to-vector rearrangement.
common/basic	${\it Basic stuff}$	
\setfun	\Rightarrow	Symbol for set functions (one-to-many)
\algfield	field	Field. field $(X, +, \times)$ is an algebraic field.
\wellorder	wellorder	$\alpha \$ algebra A well ordered set.
		wellorder(\mathfrak{X}, \leq) is a well-ordered set. \$\wellorder(\aset{X},\leq)\$ is a well-ordered

		$\operatorname{orderedfield}(\Upsilon + \vee <)$ is a well ordered field
		orderedfield($X, +, \times, \leq$) is a well-ordered field.
		<pre>\$\orderedfield(\aset{X},+,\times,\leq)\$ is a</pre>
\powerset	powerset	well-ordered field. Power set of a space
\supp	•	Support of a set
\supp \idFunc	supp Id	The identity function
· ·	Ia _−1	Ine identity function Inverse function
\invFunc	·	
\funcComp	O M	Function composition
\emptysequence	Ø	Empty sequence
\allFuncs	Functions	All maps from a space to the other
\D	d	Used for integrals
\sign	sgn	Sign function
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(A) are all continuous functions on A
		\$\contFuncs(\setA)\$ are all continuous functions of
		\$\setA\$.
\differFuncs	Differentiable	Differentiable functions
\partitions	partitions	Difference 1 sales 1 s
\mExp	mexp	Matrix exponential
\big0	\mathcal{O}	Big-O notation
\smallo	0	Dig-O notation
	U	
	≜	
\definedas		1 4
\crossprod	X	cross-product
\gsDom	Domain	
\gsCod	Codomain	
\interCC{,}		
\interCO{,}		
$\setminus interOC\{\dots,\dots\}$		
\inter00{,}		
\unitInterval	[0, 1]	
common/basic/logic	Logic	
\logicAnd	\wedge	Logic "and"
\logicOr	V	Logic "or"
\logicNot	\neg	Logic "not"
	~. ,	
common/simplesets	Simple sets	·
\reals	\mathbb{R}	Real numbers
natnumbers	N	Natural numbers
ratnumbers	Q	Rational numbers
hreals	$*\mathbb{R}$	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	$Black\ boxes$	
	Diagn voices	A black box
\bbD	D	
	Z	Inverse of a black box
		left inverse of a black box
		right inverse of a black box
	AllOutcomes	right inverse of a black box
\alloutcomes		A 11
\alloutputs	AllOutputs	All outputs of a given system
\bbDelay	Δ	The one-step delay system.
\vertblock	I	
\bbAccum	III	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>
		<pre>\$\setX\$ to \$\setY\$.</pre>
\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	$\mathcal{D}_{ ext{inst}}^{ ext{rm}}$	Set of instantaneous systems
\bbSpDet	$\mathcal{D}_{ ext{det}}$	Deterministic systems
\bbSpInvIns	$\mathcal{D}^{\star}_{\mathrm{inst}}$	Set of invertible and instantaneous systems.
/ppphin ins	inst	$\mathcal{D}^*(\mathcal{A})$ is a subset of $\mathcal{D}(\mathcal{A};\mathcal{A})$
		\$\bbSpInv(\setA)\$ is a subset of
hhCnComo	\mathcal{D}°	\${\bbSp(\setA;\setA)}\$ Systems up to representation
\bbSpCore	D	Systems up to representation
common/blackboxes/abbreviations		
\bbDinv	$D_{\underline{}}^{-1}$	
\bbDri	\boldsymbol{D}^R	
bbDli	\boldsymbol{D}^L	
\bbE	$oldsymbol{E}$	
\bbF	$oldsymbol{F}$	
\bbG	${\it G}$	
\bbSpBA	$\mathfrak{D}(\mathfrak{B};\mathcal{A})$	to write
\bbSpAB	$\mathcal{D}(\mathcal{A};\mathcal{B})$	to write
\pupphp	$\mathcal{D}(\mathfrak{I}\mathfrak{l},\mathcal{D})$	oo wiite
common/blackboxes/deprecated	Deprecated	
\bb0p	Φ	Composition operation
\inSeries	Series	Series of two systems
common/boot	Bootstrapping s	symbols
common/boot/obscmd	Observations a	nd commands
\world	\overline{w}	The "world", an element of $\mathcal{D}(\mathcal{Y};\mathcal{U})$.
\obs		Observations.
\obse	$oldsymbol{y}_{y}$	Observations (element) – also called "sensel"
\cmd	$\frac{y}{y}$	Commands, in general.
	$oldsymbol{u}$	Commands (element) – also called "?".
\cmde	u	Number of sensels
\nobs	$n_{m{y}}$	Number of sensers

\ncmd	$n_{m{u}}$	Number of actuators
\obsSp	y	Observation space
\cmdSp	ů	Commands space
· -	$\frac{\alpha}{\overline{u}}$	
\cmdSph		Domain of a single actuator $\mathcal{U} = \overline{\mathcal{U}}^{n_u}$.
\obsSph	$\overline{y}_{\overline{x}}$	Domain of a single sensel $\mathcal{Y} = \overline{\mathcal{Y}}^{n_y}$.
\obsSphd	$d^{\overline{\mathcal{Y}}}$	Metric on $d^{\overline{y}}$
\obsSpd	$d^{\mathcal{Y}}$	Metric on $d^{\mathcal{Y}}$
common/boot/spatialsensors	Spatial sensors	
\obssp	\mathcal{S}	Observation physical space.
\obsps	${\mathcal S}$	Observation physical space.
\genimages	Images	Images on physical space \mathcal{S} .
\imps	$Images(\mathcal{S})$	Images on physical space S .
common/boot/servo	Servoing	
obsg	$\check{\boldsymbol{y}}$	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	$\mathfrak{D}^{\star}(\mathfrak{P})$	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	$\mathcal{D}^{\star}(\mathcal{U};\mathcal{Y})$	1
\bbSpCoreYU	$\mathfrak{D}^{\circ}(\mathfrak{Y};\mathfrak{U})$	Systems up to representation
(- (0, 11)	of contract of
common/vehicles	The Vehicles un	iiverse
\veEnvironments	Environments	All Vehicles environments
\veSensors	Sensors	all Vehicles sensors
\veDynamics	Dynamics	all Vehicles dynamics
\veVehicles	Vehicles	all Vehicles dynamics
\veSce	S	an venicles dynamics
\veVeh	V	
\veMov	M	
\veAdd	A	
	ı	
\veJoi	J	D11-1
\vePar	Р	Parallel composition of sensors
\veNcmd	U	
\veNobs	Υ	
common/expressions	Miscellaneous es	rnrassions
\etal	et. al.	ωρι σουσισιο
\eg	$e.g.,\ etc.$	
\etc		
\ie	i.e.,	
\ala	à la	
\viceversa	vice versa	V
\vs	vs	Versus

\adhoc \apriori	$adhoc\ apriori$	
common/goodformulas	Better formulas ar	nnotations
	Double Joinnaide a.	Explanation in formulas
		Highlight something in formulas (observations)
		Highlight something in formulas (commands)
		both observations and commands
common/yesorno	${\it Miscellaneous\ func}$	ctions for document formatting
\ns		
\tickYes	\checkmark	
\tickNo	7	
\NA	n/a	
\coltickNo	7	
\yes	\checkmark	
no	7	
onehalf	$\frac{1}{2}$	small one half
\smP0	$\stackrel{\scriptscriptstyle 2}{+}1$	Small plus one
\smMO	-1	Small minus one (e.g. in smallmatrix)
common/incomplete	$Incomplete\ symbol$	S
	2.000 mp veve eg moon	Marker for sections to write
\towrite	to write	Marker for sections to write
\placeholder{,}		A placeholder
		- F-222222
\citeboh	[xxx]	
/xxx	??? [www]	
\notsure	(Not sure)	
\dontlike	(Don't like this)	
\notformal	(not formal)	
	(1100 TOTTIAL)	
\boh	???	incomplete
\bn	• • •	bad notation, this should change later
\checkbadformat		incomplete
\checkbadiofmat \prooftowritesomeday		meompiew
\myrule{,}		
\myrule{,} \unitInverval	[0, 1]	
,		
common/geometry	Differential geome	
\diff	Diff	$\begin{tabular}{ll} Diffeomorphism \\ \hline Diff(\mathcal{M}) are the diffeomeorphisms from \mathcal{M} to i $$ \diff(\aset{M})$ are the diffeomeorphisms from $$\mathcal{M}$ are the diffeomeorphisms from $$\mathcal{M}$ are the diffeomeorphism from \mathcal{M} are the diffeomeorphism from \mathcal{M} are the diffeomeorphism from \mathcal{M} are the \mathcal{M} are the diffeomeorphism from \mathcal{M} are the diffeomeorphism from \mathcal{M} are the diffeomeorphism for \mathcal{M} are the diffeomeorphism for \mathcal{M} are the diffeomeorphism for \mathcal{M} are the \mathcal{M} are the diffeomeorphism for \mathcal{M} are the diffeomeorphism for \mathcal{M} are the diffeomeorphism for \mathcal{M} are the M
		$\Lambda \$ to itself.
\diffPos	$Diff_+$	Orientation-preserving diffeomorphism.
homeoPos	$Diff_+$ $Homeo_+$	Orientation-preserving homeomorphisms (of the
\homeoPos 	$Homeo_+$	
homeoPos	$Homeo_+$ $Diff_{\mathrm{vol}}$	Orientation-preserving homeomorphisms (of the Diffeomorphisms with bounded curvature
\homeoPos 	$Homeo_+$	Orientation-preserving homeomorphisms (of the

<pre> \conformalFuncs common/geometry/manifolds \Sone</pre>	$egin{aligned} {\sf Conformal} \ & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ \hline & & & &$	$ \operatorname{Isom}(\mathcal{M}) \text{ are all the isometries of } \mathcal{M}. \\ \$ \operatorname{losmetries}(\operatorname{M})\$ \text{ are all the isometries of } \$ \operatorname{M}\$. \\ \text{Diffeomorphisms that fix a point } \\ \text{Conformal transformations} \\ \\ \text{Unit circle.}$
Stwo	\mathbb{S}^2	Unit sphere.
stwo	\mathbb{S}^2	Unit sphere
hypsp	\mathbb{H}	
\hypspn	\mathbb{H}^n	
common/groups	Group theory	
\gIdentity	e	Identity of a group
\tgroup	group	Group set with operations
		$group(G, \cdot)$ means G is a group under \cdot .
		$\tau(G), \cdot)$ means $\alpha(G)$ is
		group under \$\cdot\$.
haar	haar	Haar measure
		The Haar measure on \mathfrak{X} is haar ^X .
		The Haar measure on $\{x\}$ is $\{\hat{X}\}$.
common/groups/famous	Famous groups	
\idGroup	Id J	The trivial group with identity only.
\permutations	Perm	Set of permutation
		Stabilizer of a set
		Symmetries of a function
\allsubgroups	AllSubgroups	·
	.	Commutator sub group
\groupJoin	V	Group join
		Conjugation
groupquotient	/	Group quotient
groupsemidir	×	Semidirect product.
groupisom	\cong	Isomorphism
\issubgroup	\leq	Subgroup relation.
normalsub	⊲	Normal subgroup relation
actionsymbol		Group action.
\setminus companionFuncs $\{\ldots\}$		Companions functions
$ ag{transversalFuncs}\{\dots\}$		Transversal functions
common/groups/matrix	$Matrix\ groups$	
orthogroup	0	Orthogonal group.
\trangroup	Т	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 ± 1 on the diagonal.
Scalegroup	Sc	Multiples of the identity
\sogroup	SO	Special orthogonal group.

	0.0-	
\soneggroup	SO ⁻	
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	SE(3)	Special Euclidean group
\setwo	SE(2)	Special Euclidean group
	()	0 1
common/groups/simple	Very simple grou	
\mgroup	$(\mathbb{R}_{\circ}, imes)$	Multiplication group
\mposgroup	$(\mathbb{R}^+_{\circ}, \times)$	Positive multiplication group
\mpmgroup	$(\pm 1, \times)$	+1/-1 multiplication group
\addgroup	$(\mathbb{R},+)$	Addition group
/ddag1 oup	(, ,	radion 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.
(allipos	···· + \ /	F-55.
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 distr
		tions
		\$\conditional(\setB;\setA)\$ is the set of conditional(\setB;\setA)\$
		distributions
\finaldist	Final	Stationary distribution of a stochastic process.
\measureSp	meas	Measure space.
($\operatorname{meas}(\mathfrak{X}, \Sigma, \mu)$ is a measure space.
		\$\measureSp(\aset{X},\Sigma,\mu)\$ is a measure space.
\probSp	prob	Probability space.
\propph	biop	prob $(\mathcal{X}, \mathcal{L}, \mu)$ is a probability space.
		<pre>\$\probSp(\aset{X},\Sigma,\mu)\$ is a probability</pre>
\	ProbMeasures	Set of probability measures on a set.
measures	MIODIVICASUICS	
		Try $\mu^{\mathcal{X}} \in ProbMeasures(\mathcal{X})$
	c	$\label{eq:try problem} $\operatorname{Try } \mu(\hat{x}) \in \mathbb{X}} \ \ \ \ \ \ \ \ \ \ \ \ \$
\dirac	δ	
common/robotics	Robotics	
common/robotics \begin{align*} \text{obsip} \end{align*}	$\frac{Robotics}{m}$	Inner product bilinear form.
\obsosp	\mathcal{O}	Observation output space.
, -	-	Observation output space.
\dummySensel	s	

\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	t	Position in the world frame.
rotm	${f R}$	Rotation matrix representing orientation in the
lvel	$oldsymbol{v}$	Linear velocity
lvele	v	Linear velocity (element)
avel	ω	Angular velocity (as vector)
\avels	ω	Angular velocity in 2D (scalar)
\avelse	$\hat{\omega}$	Angular velocity (as skew-symmetric matrix)
\njoints	n_j	Number of joints in a robot
\attitude	\mathbf{R}	rambor of Johns III a robot
\position	t	
\postcion	·	
common/robotics/fieldsmapler	Field samplers	
\field	\mathcal{F}	Field sampled by the field sensor.
\fieldpos	z	Generic position in the world.
1		•
common/robotics/old	Deprecated	
\wshape	s	
\wpose	p	
\worldsp	Maps	
\wshapesp	Shapes	
,	•	
common/robotics/maps	$New \ stuff$	
mshape	s	Map shape.
\mpose		3.6
/mpose	\boldsymbol{p}	Map pose.
\mshapesp	$oldsymbol{p}$ Shapes	Map pose. Shape space.
mshapesp	Shapes	Shape space.
\mshapesp \mapsp common/statistics	Shapes Maps <i>Misc statistics</i>	Shape space. Maps set $Maps = Shapes \times SE(3)$.
\mshapesp \mapsp	Shapes Maps	Shape space. Maps set $Maps = Shapes \times \mathrm{SE}(3)$. Standard deviation
\mshapesp \mapsp common/statistics	Shapes Maps Misc statistics std var	Shape space. Maps set Maps = Shapes \times SE(3). Standard deviation Variance
\mshapesp \mapsp common/statistics \stddev	Shapes Maps Misc statistics std	Shape space. Maps set $Maps = Shapes \times \mathrm{SE}(3)$. Standard deviation
\mshapesp \mapsp common/statistics \stddev \var	Shapes Maps Misc statistics std var	Shape space. Maps set Maps = Shapes \times SE(3). Standard deviation Variance
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex</pre>	Shapes Maps Misc statistics std var E	Shape space. Maps set Maps = Shapes \times SE(3). Standard deviation Variance
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr</pre>	Shapes Maps Misc statistics std var E corr cov	Shape space. Maps set $Maps = Shapes \times \mathrm{SE}(3)$. Standard deviation Variance Expected value
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov</pre>	Shapes Maps Misc statistics std var E corr	Shape space. Maps set $Maps = Shapes \times SE(3)$. Standard deviation Variance Expected value covariance
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr</pre>	Shapes Maps Misc statistics std var E corr cov spear	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf</pre>	Shapes Maps Misc statistics std var E corr cov spear I	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr</pre>	Shapes Maps Misc statistics std var E corr cov spear I H V	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr \varinf \varinfn</pre>	Shapes Maps Misc statistics std var E corr cov spear I H	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy Variation of information
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr \varinf \varinfn </pre>	Shapes Maps Misc statistics std var E corr cov spear I H V	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy Variation of information Normalized variation of information
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr \varinf \varinfn</pre>	Shapes Maps Misc statistics std var \mathbb{E} corr cov spear \mathcal{I} \mathcal{H} \mathcal{V} \mathcal{V}_1	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy Variation of information Normalized variation of information Pushed forward notation
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr \varinf \varinfn </pre>	Shapes Maps Misc statistics std var \mathbb{E} corr cov spear \mathcal{I} \mathcal{H} \mathcal{V} \mathcal{V}_1	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy Variation of information Normalized variation of information Pushed forward notation Distributed as
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr \varinf \varinfn \distributedAs</pre>	Shapes Maps $Misc\ statistics$ Std Var E $Corr$ CoV $Spear$ I V V_1 \sim	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy Variation of information Normalized variation of information Pushed forward notation
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr \varinf \varinfn \distributedAs common/statistics/sorting</pre>	Shapes Maps $Misc\ statistics$ std var \mathbb{E} $corr$ cov $spear$ \mathcal{I} \mathcal{H} \mathcal{V} \mathcal{V}_1 \sim $Sorting\ vectors$	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy Variation of information Normalized variation of information Pushed forward notation Distributed as
<pre>\mshapesp \mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr \varinf \varinfn \distributedAs common/statistics/sorting \order</pre>	Shapes Maps $Misc\ statistics$ Std Var E $Corr$ CoV $Spear$ F F F F F F F	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy Variation of information Normalized variation of information Pushed forward notation Distributed as Order (or rank) of the elements of a vector.
<pre>\mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr \varinf \varinfn \distributedAs common/statistics/sorting \order \sorted</pre>	Shapes Maps $Misc\ statistics$ Std Var E $Corr$ CoV $Spear$ I V V_1 C $Sorting\ vectors$ V V V V V	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy Variation of information Normalized variation of information Pushed forward notation Distributed as Order (or rank) of the elements of a vector.
<pre>\mapsp common/statistics \stddev \var \ex \corr \cov \spearcorr \mutualinf \entr \varinfn \varinfn \distributedAs common/statistics/sorting \order \sorted \differ</pre>	Shapes Maps $Misc\ statistics$ Std Var E $Corr$ CoV $Spear$ CoV C	Shape space. Maps set Maps = Shapes × SE(3). Standard deviation Variance Expected value covariance Spearman correlation between two variables Mutual information Entropy Variation of information Normalized variation of information Pushed forward notation Distributed as Order (or rank) of the elements of a vector.

common/systems	Dynamical system	is
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	${\cal L}$	Laplace transform
\impulseresp	ImpulseResp	Impulse response of a system
\transferfunc	TF	Transfer function
typography	Basic typography	
		All acronyms; good for text as well as math mod
tum o graphyr/t an g ang	Tensors and tensor	on elements
typography/tensors	Tensors and tens	Tensor
 		Tensor element
		Tensor element
	16.1	
typography/matrices	Matrices and mat	
$\frac{\text{typography/matrices}}{\text{M}\{\ldots\}}$	Matrices and mat	A matrix
typography/matrices	Matrices and mat	
$\label{eq:matrices} $$ \ \M{\dots}$ $$ \ \Mel{\dots}$$	Matrices and mat	A matrix
$\frac{\text{typography/matrices}}{\text{M}\{\ldots\}}$		A matrix
<pre>typography/matrices typography/sets</pre>		A matrix The elements of a matrix
<pre>typography/matrices typography/sets </pre>		A matrix The elements of a matrix A set
<pre>typography/matrices typography/sets </pre>		A matrix The elements of a matrix A set Fonts for a set which is a group. A set \mathcal{X} , a group X, G,
<pre>typography/matrices typography/sets </pre>		A matrix The elements of a matrix A set Fonts for a set which is a group.
<pre>typography/matrices typography/sets </pre>		A matrix The elements of a matrix $ A \ \text{set} $ Fonts for a set which is a group. $ A \ \text{set} \ \mathcal{X}, \ \text{a group } X, \ G, \ \dots $ $ A \ \text{set} \ \$ \text{a group } \$ \text{a group } X \ \text{segroup} \ X \ \text{segroup} \ A \ \text{set} \ \$ \text{a group } \$ \text{a group } X \ \text{segroup} \ A \ \text{set} \ \text{segroup} \ A \ \text{segroup} \ A$
<pre>typography/matrices typography/sets </pre>		A matrix The elements of a matrix A set Fonts for a set which is a group. A set X, a group X, G, A set \$\aset{X}\$, a group \$\agroup{X}\$, \$\agroup{0}{dots} Formatting for sequences
<pre>typography/matrices typography/sets </pre>		A matrix The elements of a matrix $ A \ set \\ Fonts \ for \ a \ set \ which \ is \ a \ group. \\ A \ set \ X, \ a \ group \ X, \ G, \ \dots \\ A \ set \ a \ set \ x, \ a \ group \ a \ group \ x, \ a \ set \ a \ $
<pre>typography/matrices typography/sets \dummyIndices</pre>	Sets	A matrix The elements of a matrix A set Fonts for a set which is a group. A set X, a group X, G, A set \$\aset{X}\$, a group \$\agroup{X}\$, \$\agroup{0}{\dots} Formatting for sequences
<pre>typography/matrices typography/sets \dummyIndices typography/misc</pre>		A matrix The elements of a matrix A set Fonts for a set which is a group. A set X, a group X, G, A set \$\aset{X}\$, a group \$\agroup{X}\$, \$\agroup{\dots}\$ Formatting for sequences Formatting for one element in a sequence
<pre>typography/matrices typography/sets \dummyIndices</pre>	Sets	A matrix The elements of a matrix A set Fonts for a set which is a group. A set X, a group X, G, A set \$\aset{X}\$, a group \$\agroup{X}\$, \$\agroup{0}\$ \dots Formatting for sequences Formatting for one element in a sequence How words should look like in formulas.
<pre>typography/matrices typography/sets \dummyIndices typography/misc</pre>	Sets	A matrix The elements of a matrix A set Fonts for a set which is a group. A set X, a group X, G, A set \$\aset{X}\$, a group \$\agroup{X}\$, \$\agroup{0}\$ \dots Formatting for sequences Formatting for one element in a sequence How words should look like in formulas. Consider the operator scale,
<pre>typography/matrices typography/sets \dummyIndices typography/misc</pre>	Sets	A matrix The elements of a matrix A set Fonts for a set which is a group. A set X, a group X, G, A set \$\aset{X}\$, a group \$\agroup{X}\$, \$\agroup{0}\$ \dots Formatting for sequences Formatting for one element in a sequence How words should look like in formulas.