

## Symbols defined in *khermisc*

### General symbols

Symbol	Name	Definition
$a := b$	left hand side definition: $a$ is defined by $b$	<code>a \ldef b</code>
$a =: b$	right hand side definition: $b$ is defined by $a$	<code>a \rdef b</code>

### Symbols in option *sets*

Symbol	Name	Definition
$\mathbb{N}$	natural numbers	<code>\N</code>
$\mathbb{Z}$	integers	<code>\Z</code>
$\mathbb{Q}$	rational numbers	<code>\Q</code>
$\mathbb{R}$	real numbers	<code>\R</code>
$\overline{\mathbb{R}}$	extended real numbers	<code>\Rbar</code>
$\mathbb{C}$	complex numbers	<code>\C</code>
$\mathcal{P}(E)$	power set of $E$	<code>\PowerSet(E)</code>

### Symbols in option *real*

Symbol	Name	Definition
$e$	Euler's number	<code>\e</code>
$\arg \min$	arg min	<code>\argmin</code>
$\arg \max$	arg max	<code>\argmax</code>
$ x $	absolute value of $x$	<code>\abs{x}</code>
$d$	straight differential for integrals and derivatives	<code>\d</code>
$\ x\ $	norm of $x$	<code>\norm{x}</code>
$\ x\ _{L^2}$	norm of $x$ with subscript	<code>\norm{x}{L^2}</code>
$\text{vol}$	volume operator	<code>\vol</code>
$\text{vol}(A)$	volume of $A$	<code>\vol{A}</code>
$\mathbf{1}_A$	indicator function of set $A$	<code>\ind{A}</code>
$\mathbf{1}_A(x)$	indicator function of $A$ evaluated at $x \in \mathbb{R}$	<code>\ind{A}{x}</code>
$\lfloor x \rfloor$	largest integer smaller than $x$	<code>\floor{x}</code>
$\lceil x \rceil$	smallest integer larger than $x$	<code>\ceil{x}</code>
$\text{sinc}$	sinc function $\text{sinc}(x) = \sin(x)/x$	<code>\sinc</code>
$o$	small oh	<code>\landau</code>
$\mathcal{O}$	big oh	<code>\Landau</code>

### Symbols in option *complex*

Symbol	Name	Definition
$i$	imaginary unit	<code>\iu</code>

Re	real part of imaginary number	<code>\re</code>
$\operatorname{Re}(z)$	real part of imaginary number $z$	<code>\re{z}</code>
Im	imaginary part of imaginary number	<code>\im</code>
$\operatorname{Im}(z)$	imaginary part of imaginary number $z$	<code>\im{z}</code>

## Symbols in option *measure*

Symbol	Name	Definition
$\mathcal{D}$	Dynkin system	<code>\Dynkin</code>
$\tau$	topology	<code>\Topology</code>
$\mathcal{B}(\mathbb{R})$	Borel sigma algebra	<code>\Borel(\R)</code>
$\lambda$	Lebesgue measure	<code>\leb</code>
$f_{\#}\mu$	push forward measure of $\mu$ under $f$	<code>\pfm{\mu}{f}</code>
$d$	metric symbol	<code>\metric{}{}{}</code>
$d_X$	metric on $X$	<code>\metric{}{}{X}</code>
$d_X(x, y)$	metric on $X$ of $x$ and $y$	<code>\metric{x}{y}{X}</code>
$d(x, y)$	metric of $x$ and $y$	<code>\metric{x}{y}</code>

## Symbols in option *prob*

Symbol	Name	Definition
$X \perp\!\!\!\perp Y$	$X$ is independent of $Y$	<code>X \indep Y</code>
$\Omega$	Probability space	<code>\PSpace</code>
$\mathcal{F}$	Sigma algebra based on letter F	<code>\SigAlgF</code>
$X_n \xrightarrow{d} X$	$X_n$ converges to $X$ in distribution	<code>X_n \indist X</code>
$X_n \xrightarrow{a.s.} X$	$X_n$ converges to $X$ almost surly	<code>X_n \as X</code>
$X_n \xrightarrow{p.s.} X$	$X_n$ converges to $X$ presque sûrement	<code>X_n \ps X</code>
$X_n \xrightarrow{L^p} X$	$X_n$ converges to $X$ in $L^p$	<code>X_n \inLp{p} X</code>
$X_n \xrightarrow{\mathbb{P}} X$	$X_n$ converges to $X$ in probability	<code>X_n \inprob X</code>
$X \stackrel{d}{=} Y$	$X$ is equal to $Y$ in distribution	<code>X \eqindist Y</code>
$X \stackrel{a.s.}{=} Y$	$X$ is equal to $Y$ almost surly	<code>X \eqas Y</code>
$X \stackrel{a.s.}{\neq} Y$	$X$ is not equal to $Y$ almost surly	<code>X \neqas Y</code>
$X \stackrel{p.s.}{=} Y$	$X$ is equal to $Y$ presque sûrement	<code>X \eqps Y</code>
$X \stackrel{p.s.}{\neq} Y$	$X$ is not equal to $Y$ presque sûrement	<code>X \neqps Y</code>
$o_{a.s.}$	little oh almost surly	<code>\landauAS</code>
$\mathcal{O}_{a.s.}$	big oh almost surly	<code>\LandauAS</code>
$o_{\mathbb{P}}$	little oh in probability	<code>\landauP</code>
$\mathcal{O}_{\mathbb{P}}$	big oh in probability	<code>\LandauP</code>
cov	covariance operator	<code>\cov</code>
$\operatorname{cov}[X, X]$	covariance of $X$	<code>\cov{X}</code>
$\operatorname{cov}[X, Y]$	covariance of $X$ and $Y$	<code>\cov{X}{Y}</code>
corr	correlation operator	<code>\corr</code>

$\text{corr}[X, X]$	correlation of $X$	<code>\corr{X}</code>
$\text{corr}[X, Y]$	correlation of $X$ and $Y$	<code>\corr{X}{Y}</code>
$\text{var}$	variance operator	<code>\var</code>
$\text{var}[X]$	variance of $X$	<code>\var{X}</code>
$\text{sd}$	standard deviation operator	<code>\sd</code>
$\text{sd}[X]$	standard deviation of $X$	<code>\sd{X}</code>
$\mathbb{P}$	probability measure	<code>\Prob</code>
$\mathbb{P}(A)$	probability measure of event $A$	<code>\Prob{A}</code>
$\mathbb{P}_X$	probability measure of $X$	<code>\Prob{}{X}</code>
$\mathbb{P}_X(A)$	probability measure of $X$ for event $A$	<code>\Prob{A}{X}</code>
$\mathbb{E}$	expectation operator	<code>\Exp</code>
$\mathbb{E}[X]$	expectation of $X$	<code>\Exp{X}</code>
$\mathbb{E}_F$	expectation with respect to $F$	<code>\Exp{}{F}</code>
$\mathbb{E}_F[X]$	expectation of $X$ with respect to $F$	<code>\Exp{X}{F}</code>
$\text{med}$	median operator	<code>\median</code>
$\text{med}[X]$	median of $X$	<code>\median{X}</code>

### Symbols in option *bold*

Symbol	Name	Definition
<b>A</b>	bold A	<code>\bA</code>
<b>B</b>	bold B	<code>\bB</code>

### Symbols in option *cal*

Symbol	Name	Definition
$\mathcal{A}$	calligraphy A	<code>\calA</code>
$\mathcal{B}$	calligraphy B	<code>\calB</code>
$\mathcal{C}$	calligraphy C	<code>\calC</code>
$\mathcal{D}$	calligraphy D	<code>\calD</code>
$\mathcal{E}$	calligraphy E	<code>\calE</code>
$\mathcal{F}$	calligraphy F	<code>\calF</code>
$\mathcal{G}$	calligraphy G	<code>\calG</code>
$\mathcal{H}$	calligraphy H	<code>\calH</code>
$\mathcal{I}$	calligraphy I	<code>\calI</code>
$\mathcal{J}$	calligraphy J	<code>\calJ</code>
$\mathcal{K}$	calligraphy K	<code>\calK</code>
$\mathcal{L}$	calligraphy L	<code>\calL</code>
$\mathcal{M}$	calligraphy M	<code>\calM</code>
$\mathcal{N}$	calligraphy N	<code>\calN</code>
$\mathcal{O}$	calligraphy O	<code>\calO</code>
$\mathcal{P}$	calligraphy P	<code>\calP</code>
$\mathcal{Q}$	calligraphy Q	<code>\calQ</code>
$\mathcal{R}$	calligraphy R	<code>\calR</code>
$\mathcal{S}$	calligraphy S	<code>\calS</code>

$\mathcal{T}$	calligraphy T	<code>\calT</code>
$\mathcal{U}$	calligraphy U	<code>\calU</code>
$\mathcal{V}$	calligraphy V	<code>\calV</code>
$\mathcal{W}$	calligraphy W	<code>\calW</code>
$\mathcal{X}$	calligraphy X	<code>\calX</code>
$\mathcal{Y}$	calligraphy Y	<code>\calY</code>
$\mathcal{Z}$	calligraphy Z	<code>\calZ</code>
$\mathcal{a}$	calligraphy a	<code>\cala</code>
$\mathcal{b}$	calligraphy b	<code>\calb</code>
$\mathcal{c}$	calligraphy c	<code>\calc</code>
$\mathcal{d}$	calligraphy d	<code>\cald</code>
$\mathcal{e}$	calligraphy e	<code>\cale</code>
$\mathcal{f}$	calligraphy f	<code>\calf</code>
$\mathcal{g}$	calligraphy g	<code>\calg</code>
$\mathcal{h}$	calligraphy h	<code>\calh</code>
$\mathcal{i}$	calligraphy i	<code>\cali</code>
$\mathcal{j}$	calligraphy j	<code>\calj</code>
$\mathcal{k}$	calligraphy k	<code>\calk</code>
$\mathcal{l}$	calligraphy l	<code>\call</code>
$\mathcal{m}$	calligraphy m	<code>\calm</code>
$\mathcal{n}$	calligraphy n	<code>\caln</code>
$\mathcal{o}$	calligraphy o	<code>\calo</code>
$\mathcal{p}$	calligraphy p	<code>\calp</code>
$\mathcal{q}$	calligraphy q	<code>\calq</code>
$\mathcal{r}$	calligraphy r	<code>\calr</code>
$\mathcal{s}$	calligraphy s	<code>\cals</code>
$\mathcal{t}$	calligraphy t	<code>\calt</code>
$\mathcal{u}$	calligraphy u	<code>\calu</code>
$\mathcal{v}$	calligraphy v	<code>\calv</code>
$\mathcal{w}$	calligraphy w	<code>\calw</code>
$\mathcal{x}$	calligraphy x	<code>\calx</code>
$\mathcal{y}$	calligraphy y	<code>\caly</code>
$\mathcal{z}$	calligraphy z	<code>\calz</code>

## Symbols in option *laws*

Symbol	Name	Definition
Unif	law of the uniform distribution	<code>\lunif</code>
$\mathcal{N}$	law of the normal distribution	<code>\lnorm</code>
Pois	law of the Poisson distribution	<code>\lpois</code>
Binom	law of the binomial distribution	<code>\lbin</code>
Exp	law of the exponential distribution	<code>\lexp</code>
Ber	law of the Bernoulli distribution	<code>\lber</code>
t	law of the student t distribution	<code>\lt</code>