Testing the Physics Package in LaTeX

Kolen Cheung
University of California, Berkeley
khcheung@berkeley.edu

April 12, 2016

Automatic Bracing	Code
$\left\{\frac{1}{1+\frac{1}{2}}\right\}$	`\quantity{ }`
$\left\{\frac{1}{1+\frac{1}{2}}\right\}$	`\qty{ }`
$\left(\frac{1}{1+\frac{1}{2}}\right)$	`\pqty{ }`
$\left[\frac{1}{1+\frac{1}{2}}\right]$	`\bqty{ }`
$\left\lvert\frac{1}{1+\frac{1}{2}}\right\rvert$	`\vqty{ }`
$\left\{\frac{1}{1+\frac{1}{2}}\right\}$	`\Bqty{ }`
$\left\lvert\frac{1}{1+\frac{1}{2}}\right\rvert$	`\absolutevalue{ }`
$\left\lvert\frac{1}{1+\frac{1}{2}}\right\rvert$	`\abs{ }`
$\left\lVert\frac{1}{1+\frac{1}{2}}\right\rVert$	`\norm{ }`
$\left.\frac{1}{1+\frac{1}{2}}\right\rvert_{1}^{2}$	`\evaluated{ }_1^2`
$\left.\frac{1}{1+\frac{1}{2}}\right\rvert_{1}^{2}$	`\eval{ }_1^2`
$\mathcal{O}\left(\frac{x}{2}\right)$	`\order{ }`
$[A, B]$	`\commutator{A} {B}`
$[A, B]$	`\comm{A} {B}`
$\{A, B\}$	`\anticommutator{A} {B}`
$\{A, B\}$	`\acomm{A} {B}`
$\{A, B\}$	`\poissonbracket{A} {B}`
$\{A, B\}$	`\pb{A} {B}`

Vector Notation	Code
$\mathbf{a}$	\vectorbold{ }
$\mathbf{a}$	\vb{ }
ψ	\vb{ }
$\boldsymbol{a}$	\vb*{ }
$\boldsymbol{\psi}$	\vb*{ }
$\vec{\mathbf{a}}$	\vectorarrow{ }
$\vec{\mathbf{a}}$	\va{ }
$\vec{\psi}$	\va{ }
$\vec{\boldsymbol{a}}$	\va*{ }
$\vec{\boldsymbol{\psi}}$	\va*{ }
$\hat{\mathbf{a}}$	\vectorunit{ }
$\hat{\mathbf{a}}$	\vu{ }
$\hat{\psi}$	\vu{ }
$\hat{\boldsymbol{a}}$	\vu*{ }
$\hat{\boldsymbol{\psi}}$	\vu*{ }
$\cdot$	\dotproduct
$\cdot$	\vdot
$\times$	\crossproduct
$\times$	\cross
$\times$	\cp
$\boldsymbol{\nabla}(\psi)$	\gradient( )
$\boldsymbol{\nabla}(\psi)$	\grad( )
$\boldsymbol{\nabla}[\psi]$	\grad[ ]
$\boldsymbol{\nabla}\psi$	\grad{ }
$\boldsymbol{\nabla}\cdot(\psi)$	\divergence( )
$\boldsymbol{\nabla}\cdot(\psi)$	\div( )
$\boldsymbol{\nabla}\cdot[\psi]$	\div[ ]
$\boldsymbol{\nabla}\cdot\psi$	\div{ }
$\boldsymbol{\nabla}\times(\psi)$	\curl( )
$\boldsymbol{\nabla}\times[\psi]$	\curl[ ]
$\boldsymbol{\nabla}\times\psi$	\curl{ }
$\nabla^2(\psi)$	\laplacian( )
$\nabla^2[\psi]$	\laplacian[ ]
$\nabla^2\psi$	\laplacian{ }

Operators	Code
$\sin x$	`\sin`
$\sin(x)$	`\sin( )`
$\sin^2(x)$	`\sin[2]( )`
$\operatorname{tr}\rho$	`\tr`
$\operatorname{Tr}\rho$	`\Tr`
$\operatorname{rank} M$	`\rank`
$\operatorname{erf}(x)$	`\erf( )`
$\operatorname{Res}[f(z)]$	`\Res[ ]`
$\mathcal{P}\int f(z)\,\mathrm{d}z$	`\principalvalue{ }`
$\mathcal{P}\int f(z)\,\mathrm{d}z$	`\pv{ }`
$\mathrm{P.V.}\int f(z)\,\mathrm{d}z$	`\PV{ }`
$\operatorname{Re}\left\{\frac{1}{1+\frac{i}{2}}\right\}$	`\Re{ }`
$\operatorname{Im}\left\{\frac{1}{1+\frac{i}{2}}\right\}$	`\Im{ }`

Quick Quad Text	Code
some texts	`\qqtext{ }`
some texts	`\qq{ }`
some texts	`\qq*{ }`
,	`\qcomma`
,	`\qc`
c.c.	`\qcc`
if	`\qif`
then	`\qthen`
else	`\qelse`
otherwise	`\qotherwise`
unless	`\qunless`
given	`\qgiven`
using	`\qusing`
assume	`\qassume`
since	`\qsince`
let	`\qlet`
for	`\qfor`
all	`\qall`
even	`\qeven`
odd	`\qodd`
integer	`\qinteger`
and	`\qand`
or	`\qor`
as	`\qas`
in	`\qin`

Derivatives	Code
$\mathrm{d}x$	`\differential{ }`
$\mathrm{d}x$	`\dd{ }`
d^3x	`\dd[3] {x}`
$\mathrm{d}(\cos\theta)$	`\dd( )`
$\frac{\mathrm{d}}{\mathrm{d}x}$	`\dv{ }`
$\frac{\mathrm{d}f}{\mathrm{d}x}$	`\derivative{ }{x}`
$\frac{\mathrm{d}f}{\mathrm{d}x}$	`\dv{ }{x}`
$\frac{\mathrm{d}^n f}{\mathrm{d}x^n}$	`\dv[ ]{f}{x}`
$\frac{\mathrm{d}}{\mathrm{d}x}\left(x^2+x^3\right)$	`\dv{x}( )`
$\mathrm{d}f/\mathrm{d}x$	`\dv*{ }{x}`
$\frac{\partial}{\partial x}$	`\pdv{ }`
$\frac{\partial f}{\partial x}$	`\partialderivative{ }{x}`
$\frac{\partial f}{\partial x}$	`\pdv{ }{x}`
$\frac{\partial^n f}{\partial x^n}$	`\pdv[ ]{f}{x}`
$\frac{\partial}{\partial x}\left(x^2+x^3\right)$	`\pdv{x}( )`
$\frac{\partial^2 f}{\partial x \partial y}$	`\pdv{ }{x}{y}`
$\delta F[g(x)]$	`\variation{ }`
$\delta F[g(x)]$	`\var{ }`
$\delta(E-TS)$	`\var( )`
$\frac{\delta}{\delta g}$	`\fdv{ }`
$\frac{\delta F}{\delta g}$	`\functionalderivative{ }{g}`
$\frac{\delta F}{\delta g}$	`\fdv{ }{g}`
$\frac{\delta}{\delta V}(E-TS)$	`\fdv{V}( )`
$\delta F/\delta x$	`\fdv*{ }{x}`

Dirac Bracket Notation	Code
$\left\lvert\frac{\psi+\phi}{2}\right\rangle$	`\ket{ }`
$\lvert\frac{\psi+\phi}{2}\rangle$	`\ket*{ }`
$\left\langle\frac{\psi+\phi}{2}\right\rvert$	`\bra{ }`
$\langle\frac{\psi+\phi}{2}\rvert$	`\bra*{ }`
$\left\langle\frac{\psi+\phi}{2}\middle\vert\frac{\psi+\phi}{2}\right\rangle$	`\innerproduct{\frac{\psi + \phi}{2}}{\frac{\psi + \phi}{2}}`
$\left\langle\frac{\psi+\phi}{2}\middle\vert\frac{\psi+\phi}{2}\right\rangle$	`\braket{\frac{\psi + \phi}{2}}{\frac{\psi + \phi}{2}}`
$\langle\frac{\psi+\phi}{2}\vert\frac{\psi+\phi}{2}\rangle$	`\braket*{\frac{\psi + \phi}{2}}{\frac{\psi + \phi}{2}}`
$\left\langle\frac{\psi+\phi}{2}\middle\vert\frac{\psi+\phi}{2}\right\rangle$	`\braket{ }`
$\left\lvert\frac{\psi+\phi}{2}\right\rangle\!\left\langle\frac{\psi+\phi}{2}\right\rvert$	`\outerproduct{\frac{\psi + \phi}{2}}{\frac{\psi + \phi}{2}}`
$\left\lvert\frac{\psi+\phi}{2}\right\rangle\!\left\langle\frac{\psi+\phi}{2}\right\rvert$	`\dyad{\frac{\psi + \phi}{2}}{\frac{\psi + \phi}{2}}`
$\left\lvert\frac{\psi+\phi}{2}\right\rangle\!\left\langle\frac{\psi+\phi}{2}\right\rvert$	`\ketbra{\frac{\psi + \phi}{2}}{\frac{\psi + \phi}{2}}`
$\left\lvert\frac{\psi+\phi}{2}\right\rangle\!\left\langle\frac{\psi+\phi}{2}\right\rvert$	`\op{\frac{\psi + \phi}{2}}{\frac{\psi + \phi}{2}}`
$\lvert\frac{\psi+\phi}{2}\rangle\!\langle\frac{\psi+\phi}{2}\rvert$	`\ketbra*{\frac{\psi + \phi}{2}}{\frac{\psi + \phi}{2}}`
$\left\lvert\frac{\psi+\phi}{2}\right\rangle\!\left\langle\frac{\psi+\phi}{2}\right\rvert$	`\ketbra{ }`
$\left\langle\frac{\psi+\phi}{2}\right\rangle$	`\expectationvalue{ }`
$\left\langle\frac{\psi+\phi}{2}\right\rangle$	`\expval{ }`
$\left\langle\frac{\psi+\phi}{2}\right\rangle$	`\ev{ }`
$\langle\psi\lvert\frac{A+B}{2}\rvert\psi\rangle$	`\ev{ }{\psi}`
$\langle\frac{\psi+\phi}{2}\rangle$	`\ev*{ }`
$\langle\frac{\psi+\phi}{2}\rangle$	`\ev**{ }`
$\langle m\rvert\frac{A+B}{2}\lvert n\rangle$	`\matrixelement{m}{ }{n}`
$\langle m\rvert\frac{A+B}{2}\lvert n\rangle$	`\matrixel{m}{ }{n}`
$\langle m\rvert\frac{A+B}{2}\lvert n\rangle$	`\mel{m}{ }{n}`
$\langle m\rvert\frac{A+B}{2}\lvert n\rangle$	`\mel*{m}{ }{n}`
$\left\langle m\middle\vert\frac{A+B}{2}\middle\vert n\right\rangle$	`\mel**{m}{ }{n}`