

# Custom macros

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## Bras and kets

Originally, I was using the `braket` package for this, but it was honestly easy to just write some macros for this.

$$\backslash\mathrm{bra}\{\psi\} \rightarrow \langle\psi|; \backslash\mathrm{ket}\{\phi\} \rightarrow |\phi\rangle$$

## Expectation value

$$\begin{aligned} \$\backslash\mathrm{expval}\{a\}$ &\rightarrow \langle a \rangle \\ \$\$ \backslash\mathrm{expval}\{\mathrm{diff}\{f\}\{t\}\} \$\$ \end{aligned}$$

$$\rightarrow \left\langle \frac{df}{dt} \right\rangle$$

## Commutation

### Commutator

$$\backslash\mathrm{comm}\{\mathrm{op}\{x\}\}\{\mathrm{op}\{p\}\} = i\hbar \rightarrow [\hat{x}, \hat{p}] = i\hbar$$

### Anticommutator

$$\begin{aligned} \$\$ \backslash\mathrm{acomm}\{\mathrm{op}\{c\}\{i\}\}\{\mathrm{hc}\{c\}\{j\}\} = \delta_{\alpha, \beta} \$\$ \\ \rightarrow \{\hat{c}_i, \hat{c}_j^\dagger\} = \delta_{\alpha, \beta} \end{aligned}$$

## Compact derivatives

$$\begin{aligned} \$\$ \backslash\mathrm{dlp}\{f\}\{t\} \$\$ \\ \rightarrow \partial_t f \end{aligned}$$