LaTeX sample

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1 Basics

Standard text. Standard text. Standard text. Standard text. Standard text. Standard text. Standard text. Only a full empty line creates a full paragraph break.

paragraph break, paragraph break, paragraph break, paragraph break, paragraph break, paragraph break, paragraph break.

Text can be normal, a.k.a. roman, *italics* or *slanted*, underlined, without serifs, `fixed width`, in Small Capitals or just CAPITALS, **bold** or medium weight.

You can also have text of different sizes:

Huge

huge

LARGE

Large

large

normalsize

small

footnotesize

scriptsize

tiny

custom size

Sometimes you want to use lists:

- Item 1
- Item 2
  - inside item 2
  - inside item 2
    - inside inside
    - inside inside
  - inside item 2
- Item 3
- Item 4

or numbered lists

1. first
2. second

1.1 Subsection 1

There are also subsections

1.1.1 Subsubsection 1

and subsubsections! Below those, there are only

Paragraphs Like this one. Like this one. Like this one. Like this one. Like this one. Like this one. Like this one. Like this one. Like this one. Like this one. Like this one. Like this one. Like this one. Like this one.

2 Figures

You also need to have figures, like this nice figure number 1.

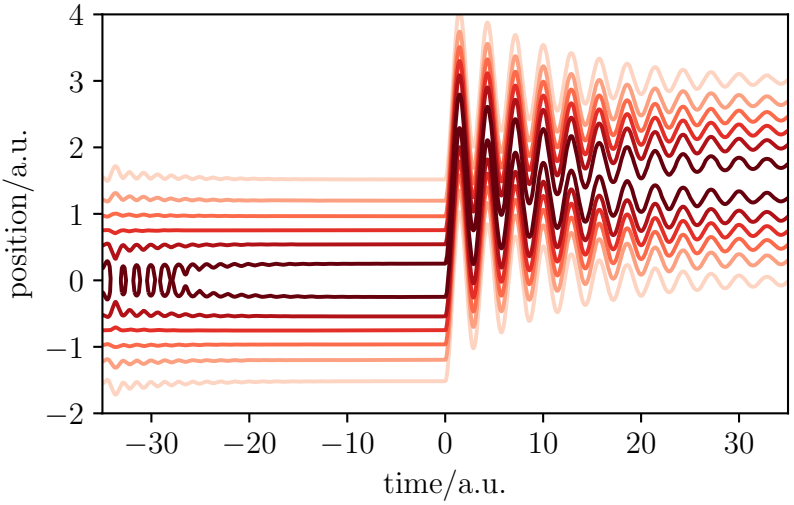

Figure 1: A contour plot of a wavepacket being equilibrated with a bath in a harmonic potential centered at $q = 0$. At $t = 0$ the potential is shifted by an addition of a linear term, which creates a new minimum at $q = 3/2$ a.u. This is a reproduction of a similar calculation from Tanimura, Wolynes, *Phys. Rev. A*, 1991, **43**, 4131–4142.

3 Mathematics

An inline equation $x = 3$ inside a paragraph. And a separate equation

$$\hat{\rho}_t(q) = \int \mathrm{d}\boldsymbol{x} \langle \boldsymbol{x} | \hat{\rho}_t(q, \boldsymbol{x}) | \boldsymbol{x} \rangle, \tag{1}$$

The equation does not have to be numbered like

$$G_t(q(\tau), q'(\tau)) = \exp\left[\frac{\mathrm{i}}{\hbar}[S_\mathrm{S}(q(\tau); t) - S_\mathrm{S}(q'(\tau); t)]\right]$$

but if they are numbered

$$\hat{\rho}_t(q) = \int \mathrm{d}\boldsymbol{x} \langle \boldsymbol{x} | \hat{\rho}_t(q, \boldsymbol{x}) | \boldsymbol{x} \rangle, \tag{2}$$

then you can refer to them as eq. 2. Some equations are long and need two lines

$$\frac{\partial \hat{\rho}_{\boldsymbol{n}}}{\partial t} = -\left(\frac{\mathrm{i}}{\hbar}\hat{\mathcal{L}} + \sum_{k=0}^{K} n_k \gamma_k + \hat{\Xi}\right)\hat{\rho}_{\boldsymbol{n}} \\ - \frac{\mathrm{i}}{\hbar}\hat{q}^{\times}\sum_{k=0}^{K}\hat{\rho}_{\boldsymbol{n}_k^{\oplus}} - \frac{\mathrm{i}}{\hbar}\sum_{k=0}^{K} n_k\left(C_k\hat{q}\hat{\rho}_{\boldsymbol{n}_k^{\ominus}} - C_k^{*}\hat{\rho}_{\boldsymbol{n}_k^{\ominus}}\hat{q}\right), \quad (3)$$

Sometimes you want to split the equation, but align it nicely

$$\begin{aligned}\frac{\partial \rho_n(q_i,q_j)}{\partial t} =& -\left(\frac{\mathrm{i}}{\hbar}\hat{\mathcal{L}} + n\gamma\right)\rho_n(q_i,q_j) - \frac{\mathrm{i}}{\hbar}(q_i-q_j)\rho_{n+1}(q_i,q_j) \\ &- \frac{n_0\eta\gamma^2}{2}(q_i+q_j)\rho_{n-1}(q_i,q_j) \\ &- \frac{\mathrm{i}}{\hbar}\frac{n\hbar\eta\gamma^2}{2}\cot\left(\frac{\beta\hbar\gamma}{2}\right)(q_i-q_j)\rho_{n-1}(q_i,q_j).\end{aligned} \quad (4)$$

Sometimes you want to give people a choice

$$H_{\mathrm{S}}(q_i,q_j) = \begin{cases} V(q_i) + \frac{\hbar^2\pi^2}{6m(\Delta q)^2} & \text{for } i=j, \\ \frac{\hbar^2}{m(\Delta q)^2(i-j)^2}(-1)^{i-j} & \text{otherwise,}\end{cases} \quad (5)$$