

L^AT_EX 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

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

2 Figures

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

3 Mathematics

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

$$\hat{\rho}_t(q) = \int d\mathbf{x} \langle \mathbf{x} | \hat{\rho}_t(q, \mathbf{x}) | \mathbf{x} \rangle, \quad (1)$$

The equation does not have to be numbered like

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

but if they are numbered

$$\hat{\rho}_t(q) = \int d\mathbf{x} \langle \mathbf{x} | \hat{\rho}_t(q, \mathbf{x}) | \mathbf{x} \rangle, \quad (2)$$

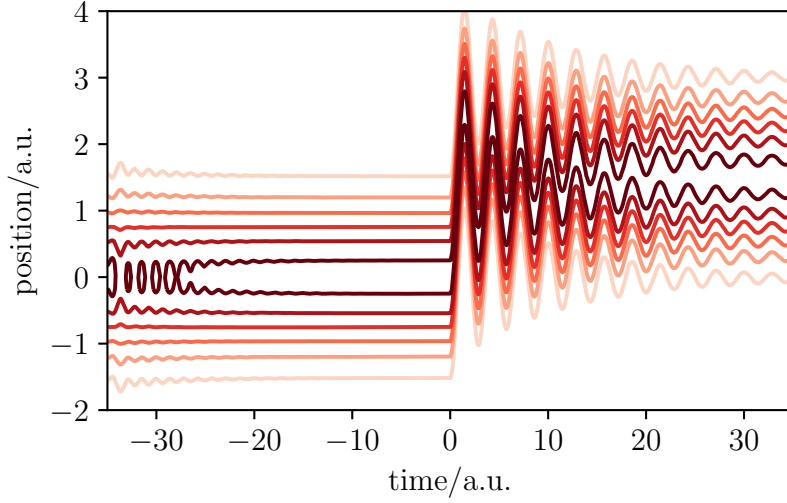


Figure 1: A contour plot of a wavepacket being equilibrated with a bath in a harmonic potential centered at $q = 0$. At $t = 0$ the potential is shifted by an addition of a linear term, which creates a new minimum at $q = 3/2$ a.u. This is a reproduction of a similar calculation from Tanimura, Wolynes,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

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

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

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

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

Sometimes you want to give people a choice

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