

$$\mathrm{Physicus}$$

$$\mathrm{January\ 8,\ 2025}$$

$$\langle \psi |$$

$$|\psi\rangle$$

$$([\{A\}])$$

$$\langle \tilde{\psi},\phi\rangle$$

$$\langle \tilde{\psi} | \phi \rangle$$

$$|a| ||b||$$

$$\left.\frac{a}{b}\right|_c+\mathcal{O}(x^2)$$

$$\left[\hat{A},\frac{B}{2}\right]+\left\{\hat{A},\frac{B}{2}\right\}$$

$$\nabla \frac{\mathrm{d} a}{\mathrm{d} c} \frac{\mathrm{d}^2 a}{\mathrm{d} c^2}$$

$$\begin{aligned}\text{Covar}_\psi(\mathcal{Z}_i,\mathcal{Z}_j) &= \mathbb{E}_\psi[(\mathcal{Z}_i-\mathbb{E}_\psi(\mathcal{Z}_i))(\mathcal{Z}_j-\mathbb{E}_\psi(\mathcal{Z}_j))] \\ &= \mathbb{E}_\psi[\mathcal{Z}_{ij}]-\mathbb{E}_\psi[\mathcal{Z}_i]\mathbb{E}_\psi[\mathcal{Z}_j] \\ &= \langle \psi | \hat{\mathcal{Z}}_{ij} | \psi \rangle - \langle \psi | \hat{\mathcal{Z}}_i | \psi \rangle \langle \psi | \hat{\mathcal{Z}}_j | \psi \rangle\end{aligned}$$

$$\mathcal{O}\!\left(\frac{x^2}{y}\right)$$

$$\mathbf{1}$$