Physicus

$March\ 6,\ 2025$

 $\langle \psi |$

 $|\psi\rangle$

 $([\{A\}])$

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

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

 $\frac{\partial^2 f}{\partial x^2}$

 $|a|\|b\|$

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

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

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

$$Covar_{\psi}(\mathcal{Z}_{i}, \mathcal{Z}_{j}) = \mathbb{E}_{\psi}[(\mathcal{Z}_{i} - \mathbb{E}_{\psi}(\mathcal{Z}_{i}))(\mathcal{Z}_{j} - \mathbb{E}_{\psi}(\mathcal{Z}_{j}))]$$
$$= \mathbb{E}_{\psi}[\mathcal{Z}_{ij}] - \mathbb{E}_{\psi}[\mathcal{Z}_{i}]\mathbb{E}_{\psi}[\mathcal{Z}_{j}]$$
$$= \langle \psi | \hat{\mathcal{Z}}_{ij} | \psi \rangle - \langle \psi | \hat{\mathcal{Z}}_{i} | \psi \rangle \langle \psi | \hat{\mathcal{Z}}_{j} | \psi \rangle$$

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