

$$\begin{aligned} \left(F_N \middle| \sigma_{\Delta}(t_{\text{f}})\right) &= \int_{t_2}^{t_{\text{f}}} dt_N \left(F_N \middle| N(t_{\text{f}}, t_N) W_{\Delta}(t_{\text{f}}, t_N, t_2) \middle| \sigma_N\right) \\ &\quad + \int_{t_2}^{t_{\text{f}}} dt_{N+1} \left(F_N \middle| U(t_{\text{f}}, t_{N+1}) W_{\Delta}(t_{\text{f}}, t_{N+1}, t_2) \middle| \sigma_{N+1}\right) \end{aligned}$$