

$$\nabla C = \lambda^T H_{\vec{u}} + C_{\vec{u}} \quad \begin{matrix} \cancel{O(NT^2M)} \\ O(TMD_{\vec{u}}) \end{matrix}$$

$$H_x^T \lambda = -J_x \quad \begin{matrix} \cancel{O((NT)^3)} \\ O(NTD_{\vec{\rho}}) \quad \cancel{O((NT)^2)} \end{matrix}$$