

$$\begin{aligned}
 \diamond v'_k &= \Gamma^+[v_k; \zeta_v] \equiv \underbrace{v_k \odot \exp\left(\frac{\varepsilon_v^k}{2} s_v^k(\zeta_{v_k})\right)}_{v \text{ scaling}} - \frac{\varepsilon_v^k}{2} \left[\underbrace{\partial_x S(x_k) \odot \exp\left(\varepsilon_v^k q_v^k(\zeta_{v_k})\right)}_{\text{force scaling}} + \underbrace{t_v^k(\zeta_{v_k})}_{\text{translation}} \right]
 \end{aligned}$$

$$\begin{aligned}
 \diamond x'_k &= m^k \odot x_k + \bar{m}^k \odot \underbrace{\Lambda^+[\bar{x}_k; \zeta_{\bar{x}}]}_{\text{}} \equiv \underbrace{x_k \odot \exp\left(\varepsilon_x^k s_x^k(\zeta_{x_k})\right)}_{x \text{ scaling}} + \varepsilon_x^k \left[\underbrace{v'_k \odot \exp\left(\varepsilon_x^k q_x^k(\zeta_{x_k})\right)}_{v \text{ scaling}} + \underbrace{t_x^k(\zeta_{x_k})}_{\text{translation}} \right]
 \end{aligned}$$