

$$L_{CP} = \frac{1}{2} M \sum_{i=1}^N \dot{\mathbf{R}}_i^2 + \frac{1}{2} \mu \sum_{\alpha=1}^n \int |\dot{\psi}_\alpha|^2 d\mathbf{r} - E[\mathbf{R}, \psi] + \sum_{\alpha, \beta} \lambda_{\alpha\beta} \left(\int \psi_\alpha^* \psi_\beta d\mathbf{r} - \delta_{\alpha\beta} \right)$$