

$$\frac{\partial A(\mathbf{r}, t)}{\partial t} = -\frac{1}{m} [\nabla A(\mathbf{r}, t)] \cdot [\nabla S(\mathbf{r}, t)] \\ -\frac{1}{2m} A(\mathbf{r}, t) \nabla^2 S(\mathbf{r}, t) \ ,$$