Problems

December 4, 2018

1. Show that Hamilton's vector, $\mathbf{h} \equiv \mathbf{p} - \frac{\mu\alpha}{L}\hat{\boldsymbol{\varphi}}$, cannot be identified as a canonical variable, say, $\boldsymbol{\pi} = \mathbf{h}$.

2. Use Hamiltonian-Jacobi theory to solve for the motion of a free particle in 3-dimensions.