PHYS 325: Lecture 25

Cliff Sun

December 3, 2024

We define generalized coordinates

$$\{q_i\} = \{q_1, \dots\} \tag{1}$$

A generalized velocity:

$$\dot{q_i} = \frac{d}{dt} q_i \tag{2}$$

Note, $\{q_i\}$ is a list of potential paths. We introduce an action as a functional

$$S[\vec{q}(t)] = \int_{t_1}^{t_2} dt L(q_i(t), \dot{q}_i(t), t) \tag{3}$$