10.1: Point Transformations

It’s clear that Lagrange’s equations are correct for any reasonable choice of parameters labeling the system configuration. Let’s call our first choice *[Math Processing Error]*. Now transform to a new set, maybe even time dependent, *[Math Processing Error]*. The derivation of Lagrange’s equations by minimizing the action still works, so Hamilton’s equations must still also be OK too. This is called a *point transformation*: we’ve just moved to a different coordinate system, we’re relabeling the *points* in configuration space (but possibly in a time-dependent way).

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