

$$\mathbf{X}_H = \partial_t + \int_{\mathbb{R}} \mathrm{d}\sigma \left( \dot{q}(\sigma) \frac{\delta}{\delta q(\sigma)} + \left[ \dot{\pi}(\sigma) + \frac{\delta L(q, t)}{\delta q(\sigma)} \right] \frac{\delta}{\delta \pi(\sigma)} \right)$$