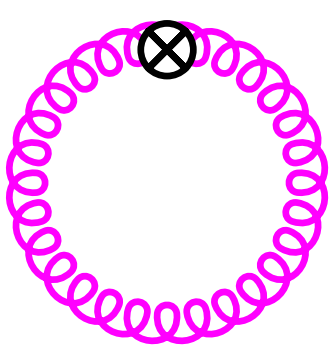
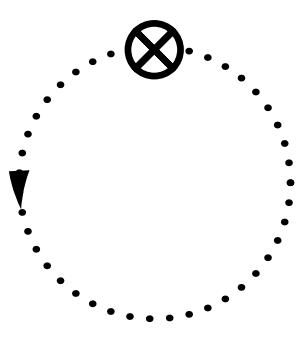
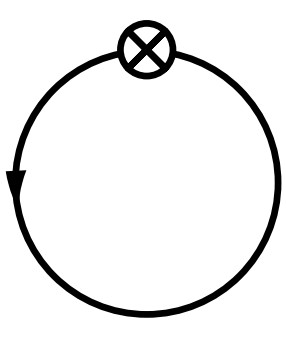
$$\partial_t \Gamma_k[\Phi] = \frac{1}{2}$$  $$-$$  $$-$$  $$+\frac{1}{2}$$