$L(t)$, $B(t)$ が

$$\frac{dL(t)}{dt} = B(t)L(t) - L(t)B(t)$$ の解。

$$\Rightarrow \begin{cases} \dfrac{da_i}{dt} = a_i b_i - a_i b_{i+1} \\ \dfrac{db_i}{dt} = -2a_i^2 + 2a_{i-1}^2 = 2(a_{i-1} - a_i)(a_{i+1} + a_i) \end{cases}$$

$$\Rightarrow \begin{cases} \dfrac{1}{4} e^{(q_i - q_{i+1})/2} \left\{ \dfrac{dq_i}{dt} - \dfrac{dq_{i+1}}{dt} \right\} = a_i (b_i - b_{i+1}) \\ \dfrac{1}{2} \dfrac{dp_i}{dt} = \dfrac{1}{2} e^{q_i - q_{i+1}} - \dfrac{1}{2} e^{q_{i-1} - q_i} \end{cases}$$

$$\Rightarrow \begin{cases} \dfrac{1}{2} \dfrac{dq_i}{dt} - \dfrac{1}{2} \dfrac{dq_{i+1}}{dt} = \dfrac{1}{2} p_i - \dfrac{1}{2} p_{i+1} \\ \dfrac{dp_i}{dt} = -\dfrac{\partial H}{\partial q_i} \qquad (!!) \end{cases}$$

$$\Rightarrow \quad \frac{dq_i}{dt} - \frac{dq_{i+1}}{dt} = \frac{\partial H}{\partial p_i} - \frac{\partial H}{\partial p_{i+1}}$$

$\Rightarrow$