I'm trying to figure out how to get there $S = \int_{t,x} \tilde{\theta}\left(\partial_t \theta - Z\nabla^2\theta + \frac{g}{2}(\nabla\theta)^2\right) - D\tilde{\theta}^2$ [1] from this $\partial_t h = \partial_x^2 h + \lambda(\partial_x h)^2 - \infty + \xi$ [2].

[1] Daviet, Kardar-Parisi-Zhang scaling in time-crystalline matter, 2025. https://arxiv.org/pdf/2412.09677.

[2] Hairer, Solving the KPZ equation, 2024. https://arxiv.org/pdf/1109.6811.