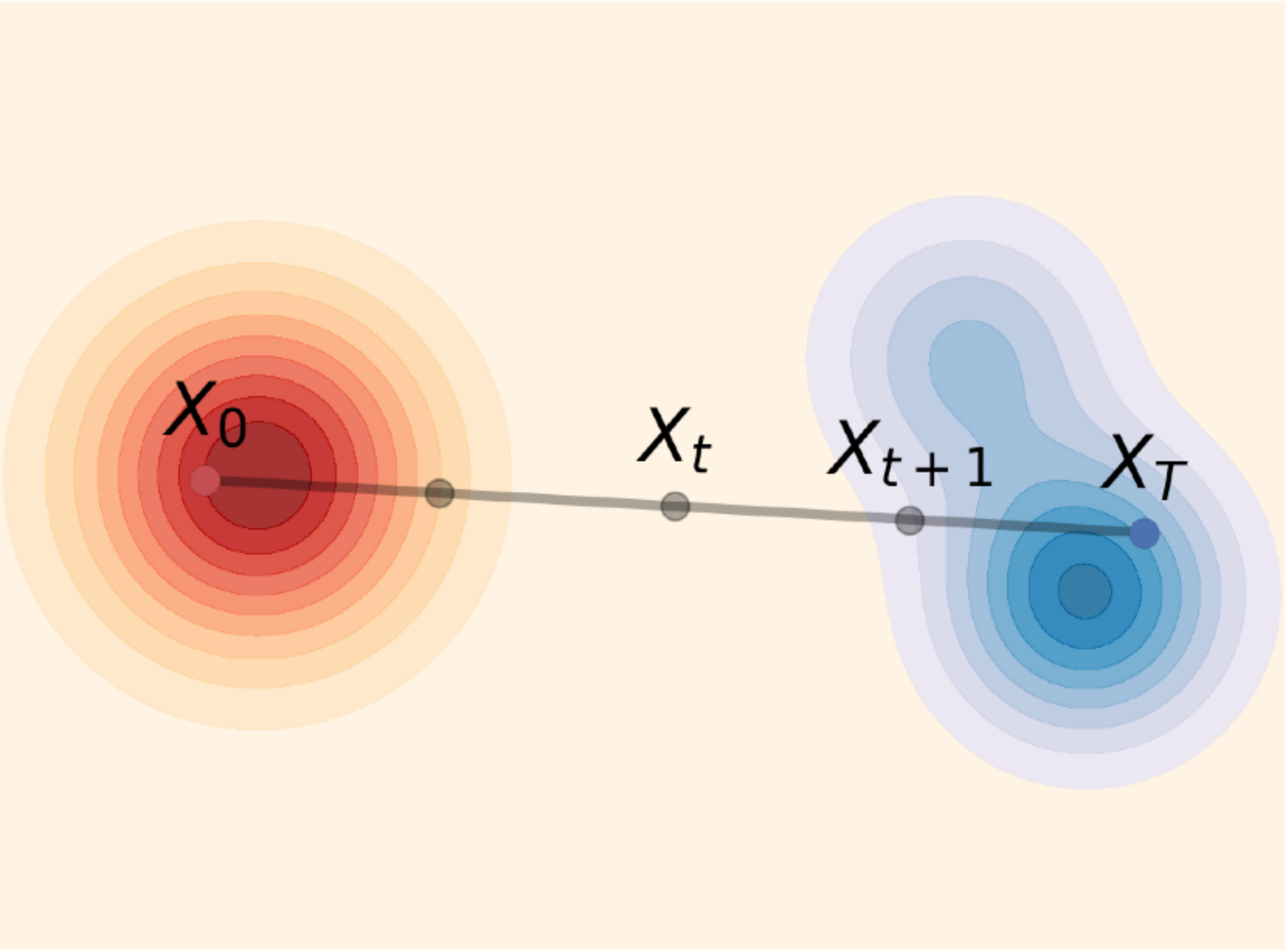
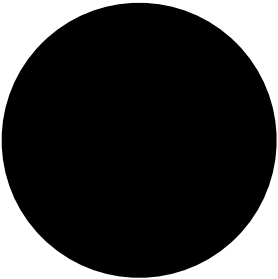
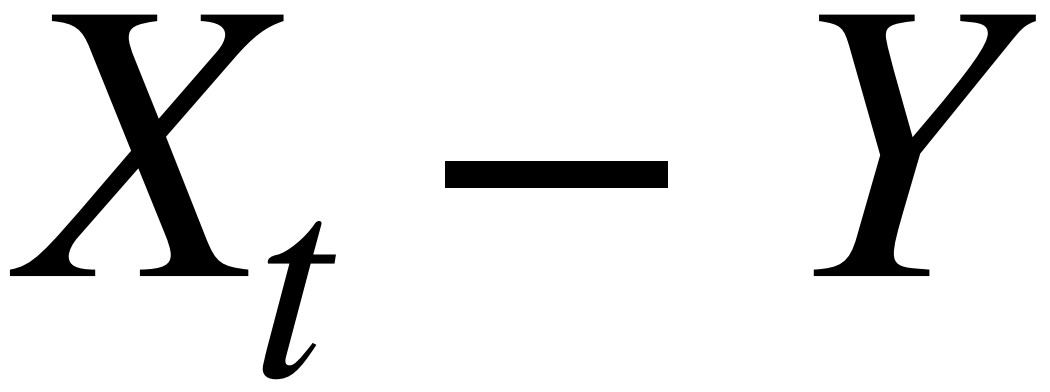
Parametrization

We find a map $Y, X_t \mapsto X_{t+1}$ and train a model $p^{\theta}_{Y|t}\left(Y \,|\, X_t\right)$:

Noise prediction: $Y = X_0$.

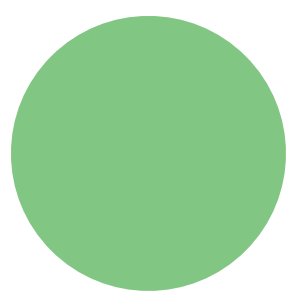

X_0
X_t
X_{t+1}
X_T



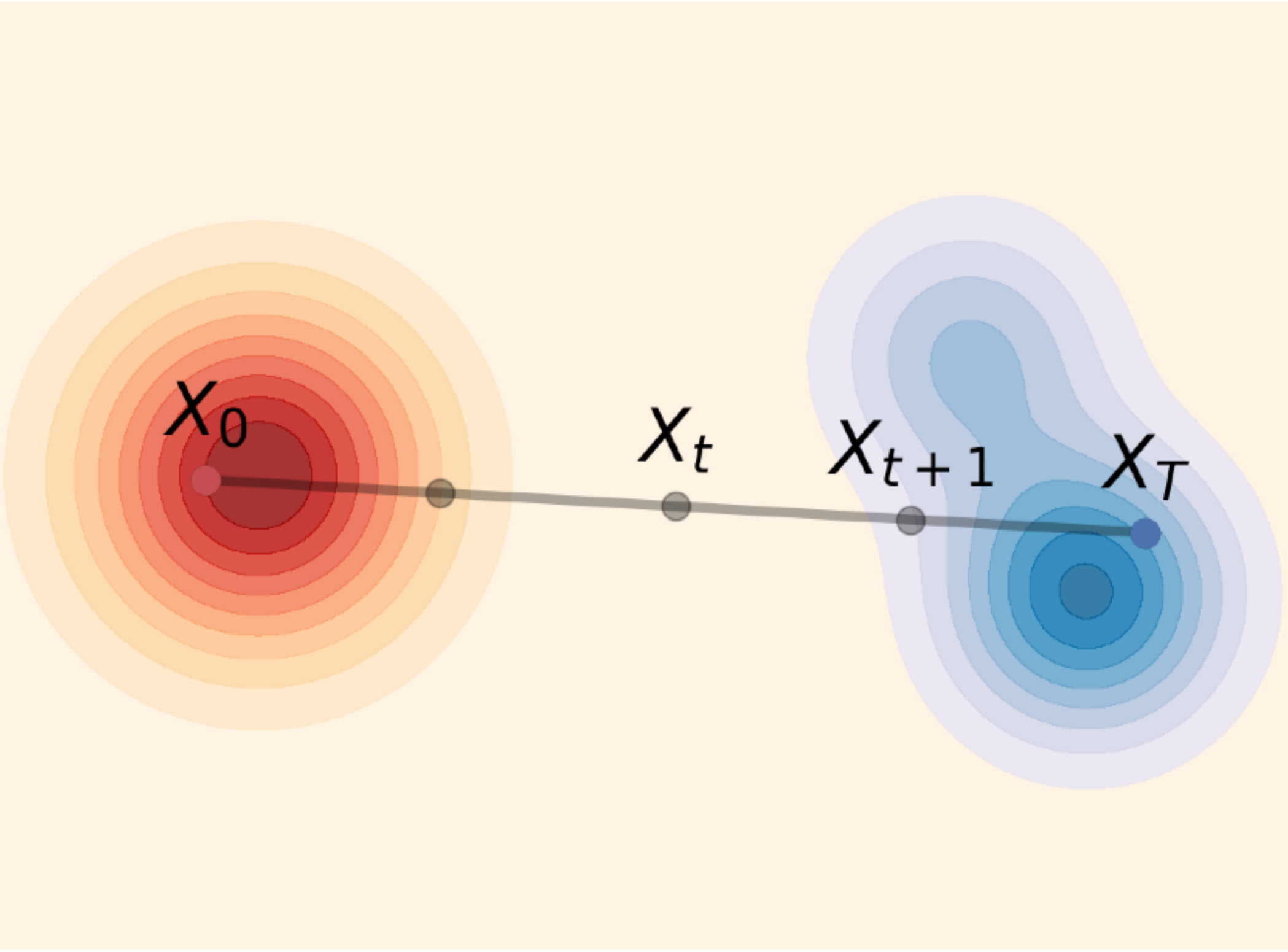


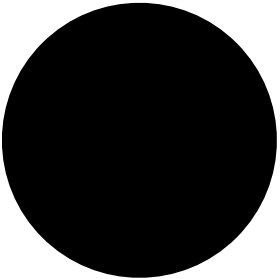
$$\frac{X_t - Y}{t}$$

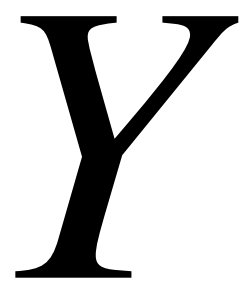
$$X_{t+1} = X_t + \frac{X_t - Y}{t}$$



Difference prediction: $Y = X_T - X_0$.


X_0
X_t
X_{t+1}
X_T



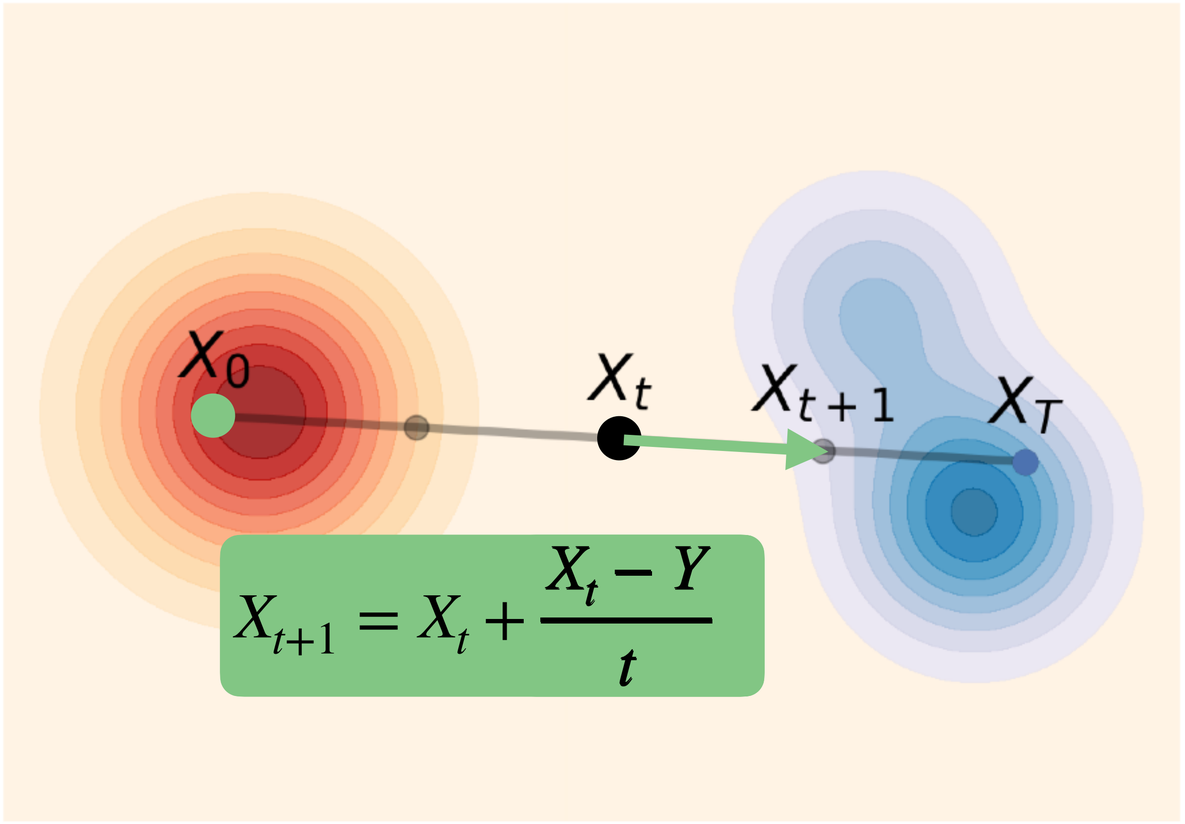


$$X_{t+1} = X_t + \frac{Y}{T}$$

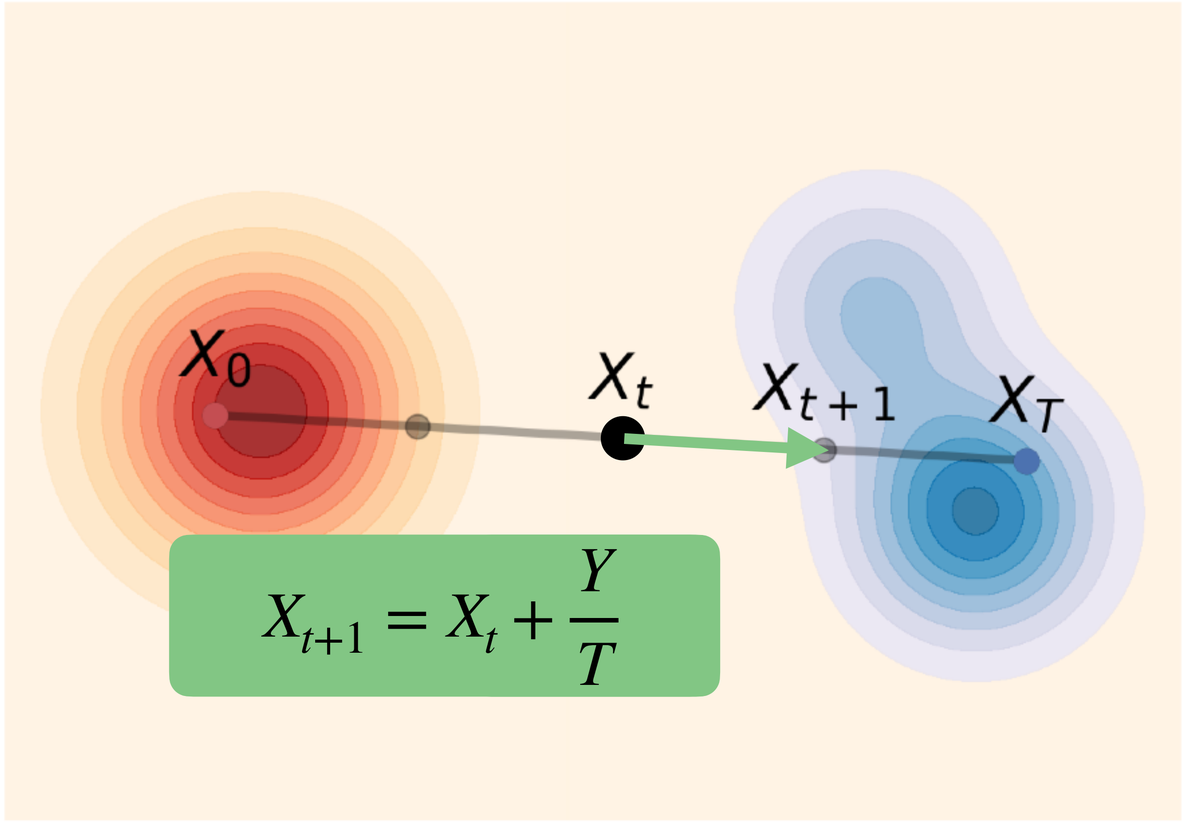
Parametrization

We find a map $Y, X_t \mapsto X_{t+1}$ and train a model $p^{\theta}_{Y|t}\left(Y \,|\, X_t\right)$:

Noise prediction: $Y = X_0$.



Difference prediction: $Y = X_T - X_0$.



Modeling

$p^{\theta}_{Y|t}\left(Y \,|\, X_t\right)$ is naturally modeled with a Flow Matching model $u^{\theta}_{s}(Y_s \,|\, X_t)$.