



Supervising processes since 1988

Example:

## Linear process

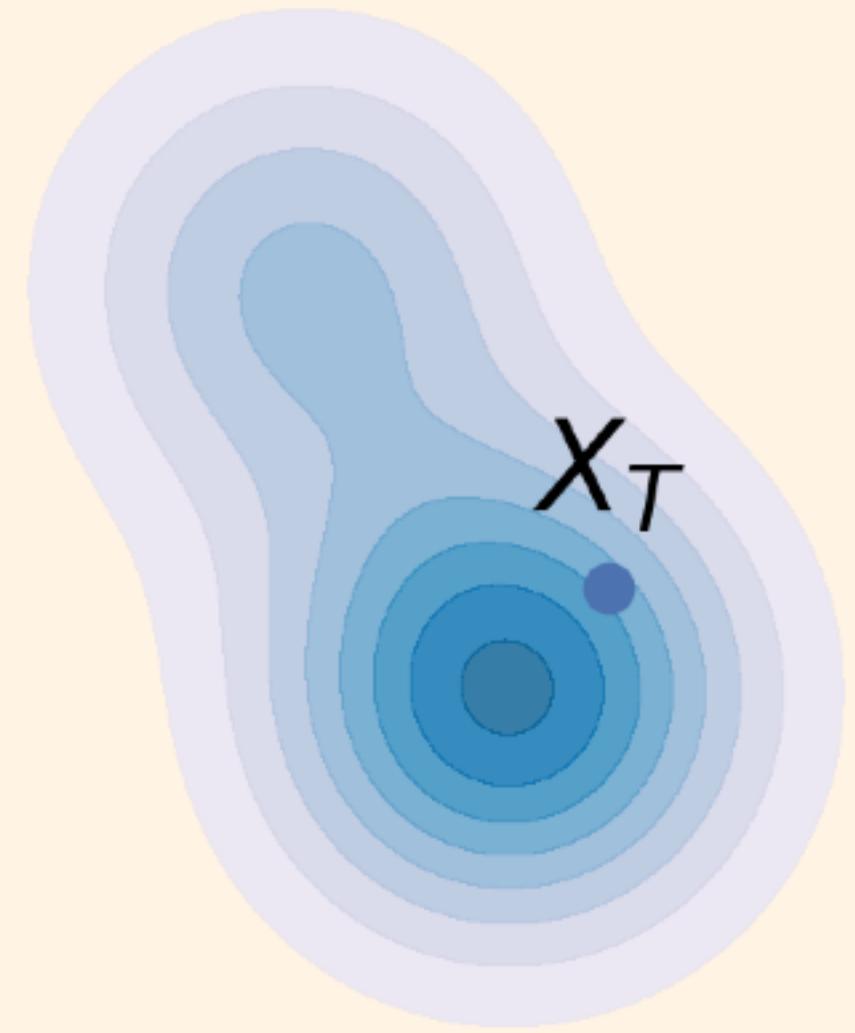
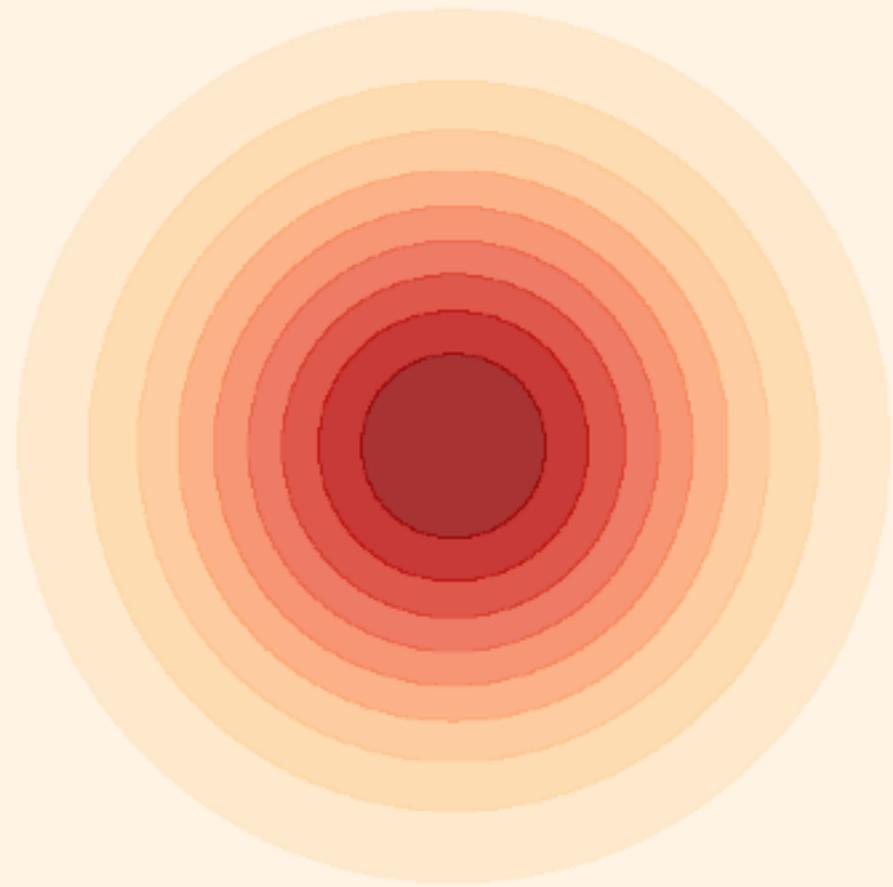
$$X_t = \left(1 - \frac{t}{T}\right) X_0 + \frac{t}{T} X_T ,$$

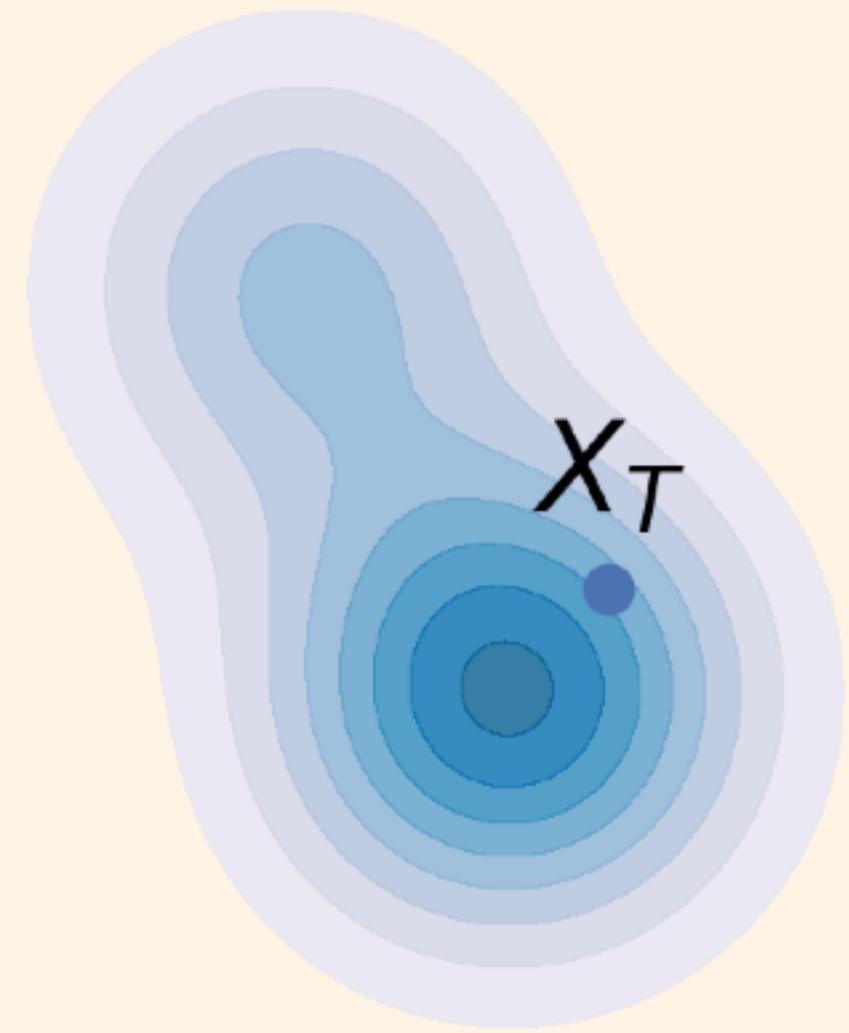
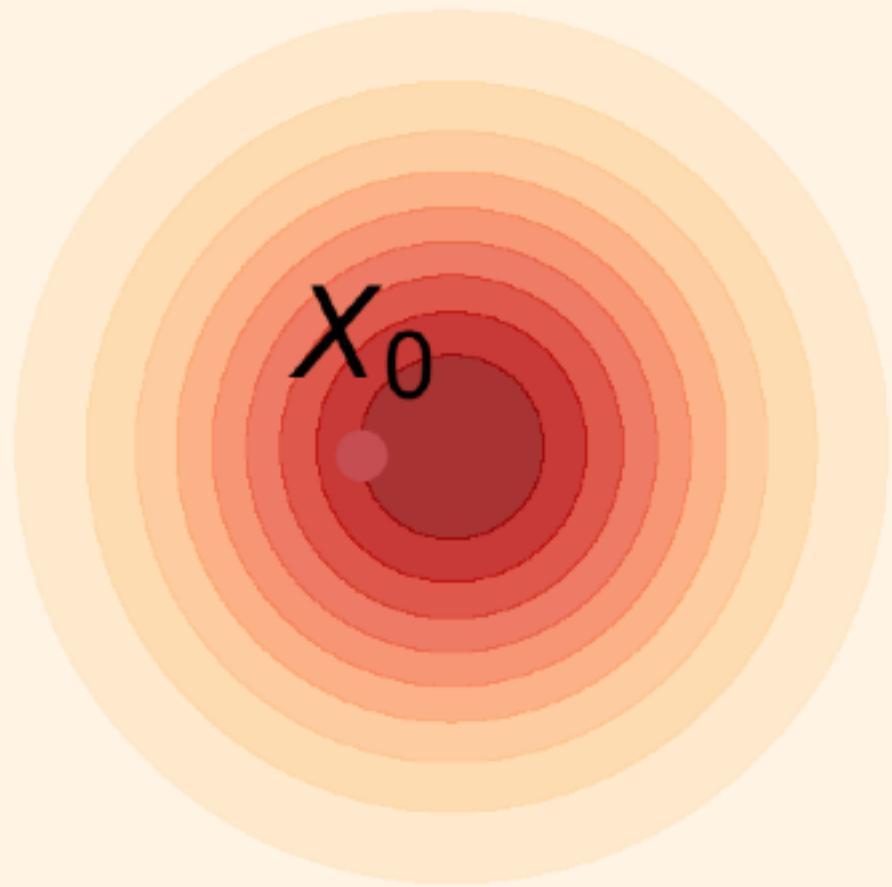
Where  $X_0 \sim \mathcal{N}(0, I)$  and  $X_T \sim p_T$ .

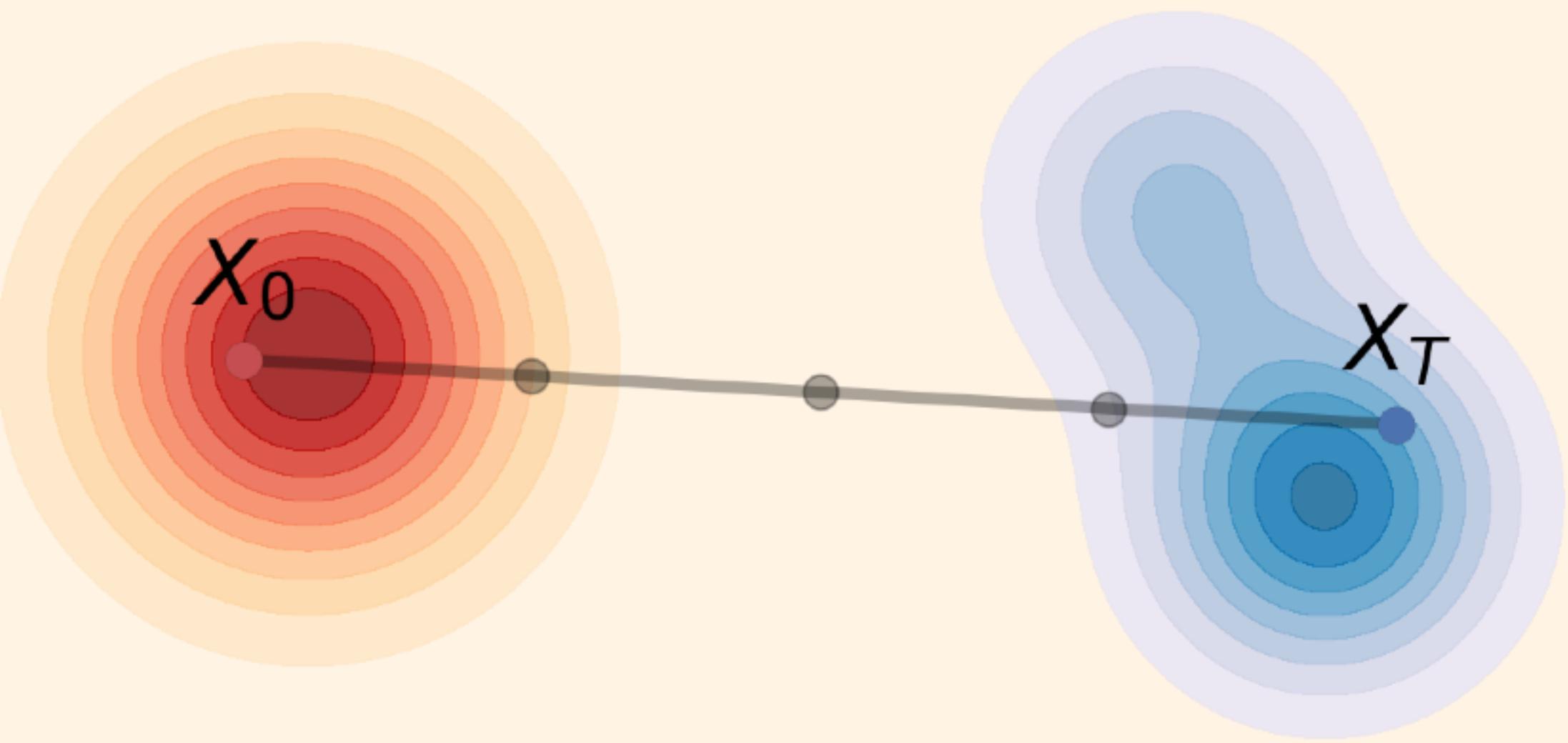
# Requirements:

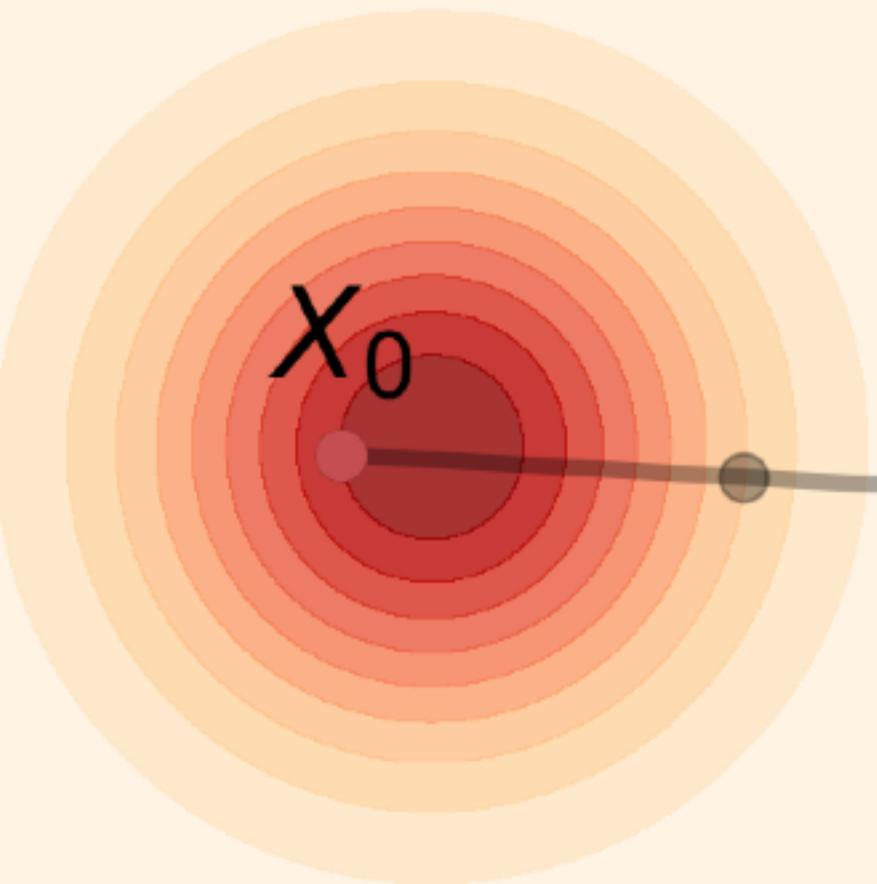
$X_t$  interpolate source (noise) and target (data).

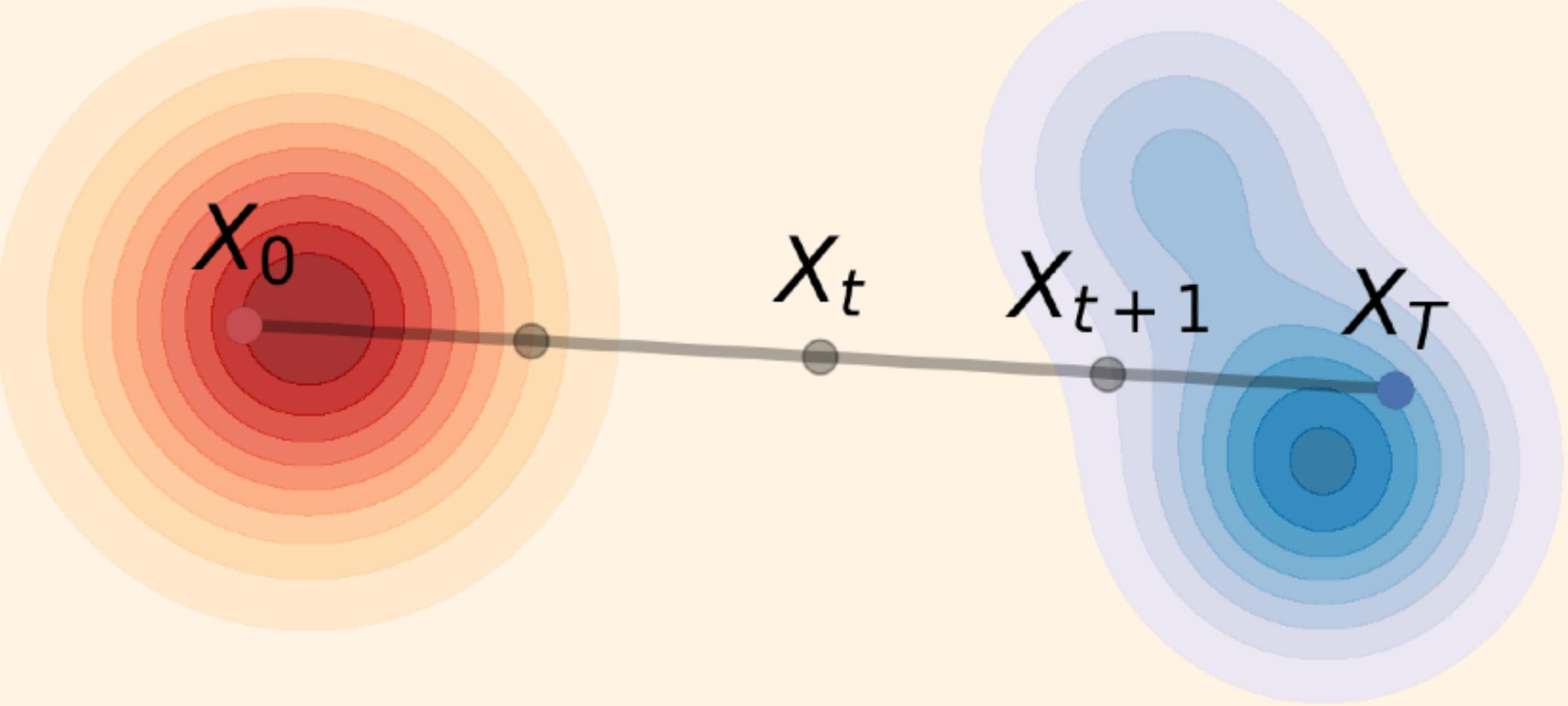


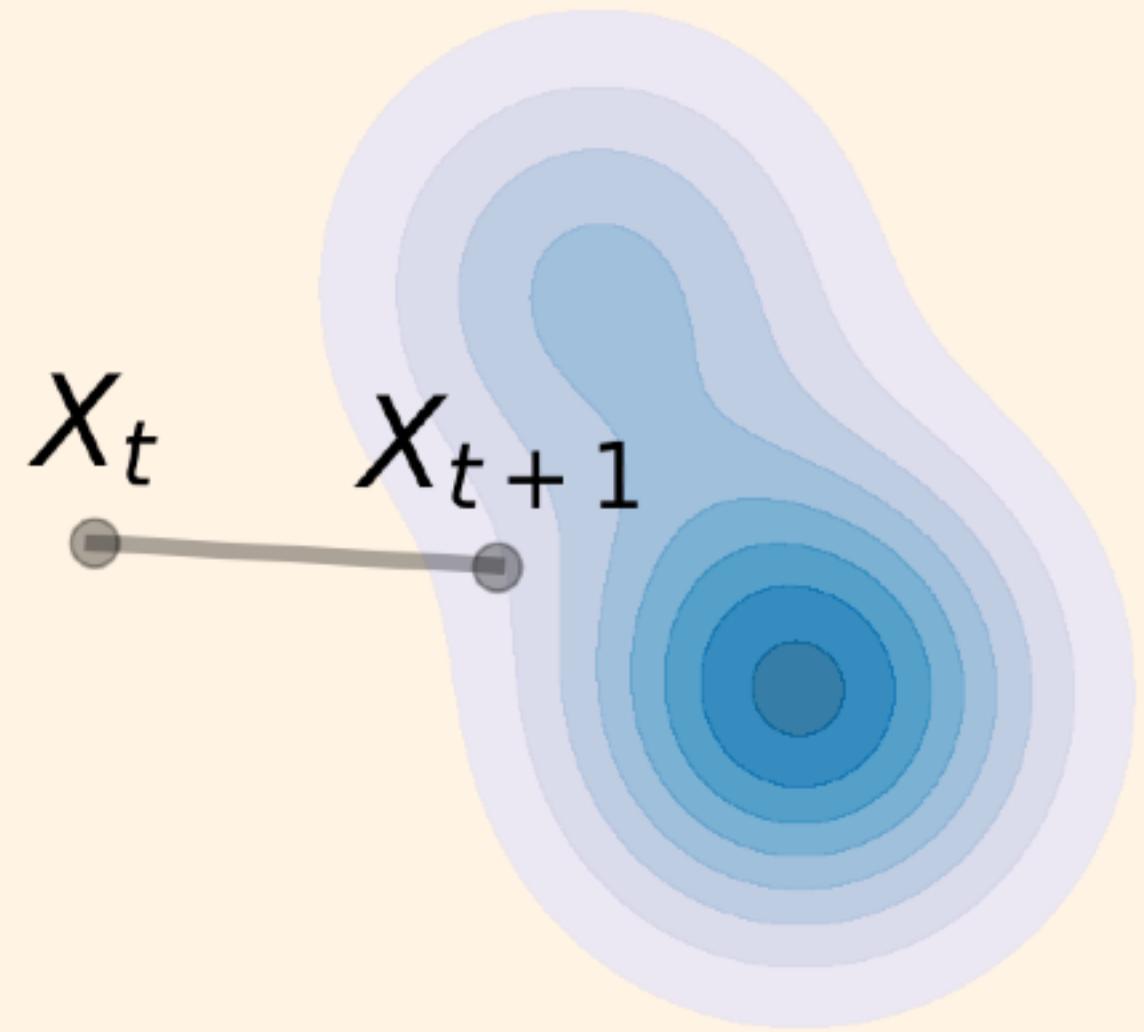
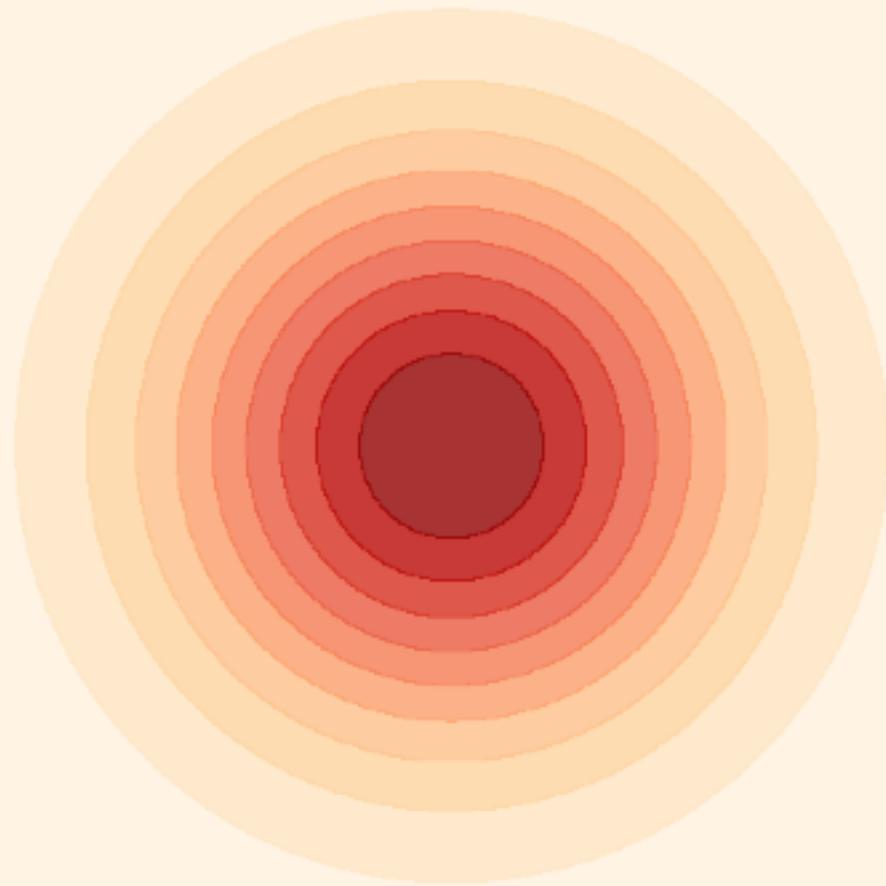


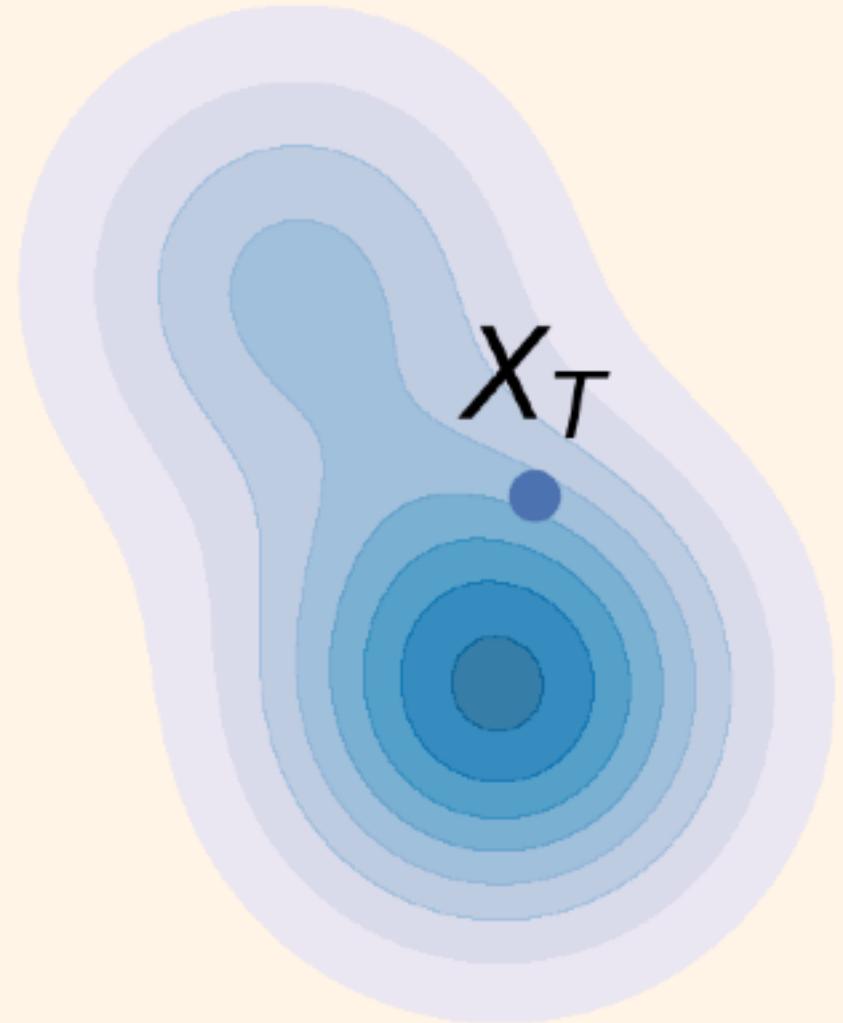
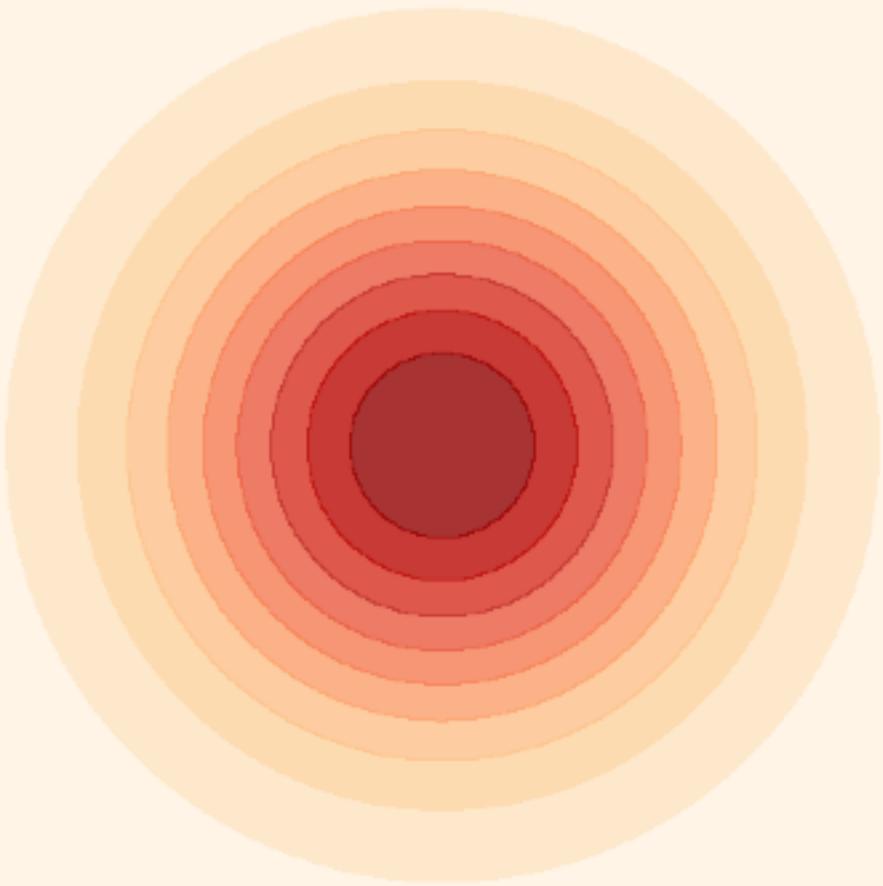


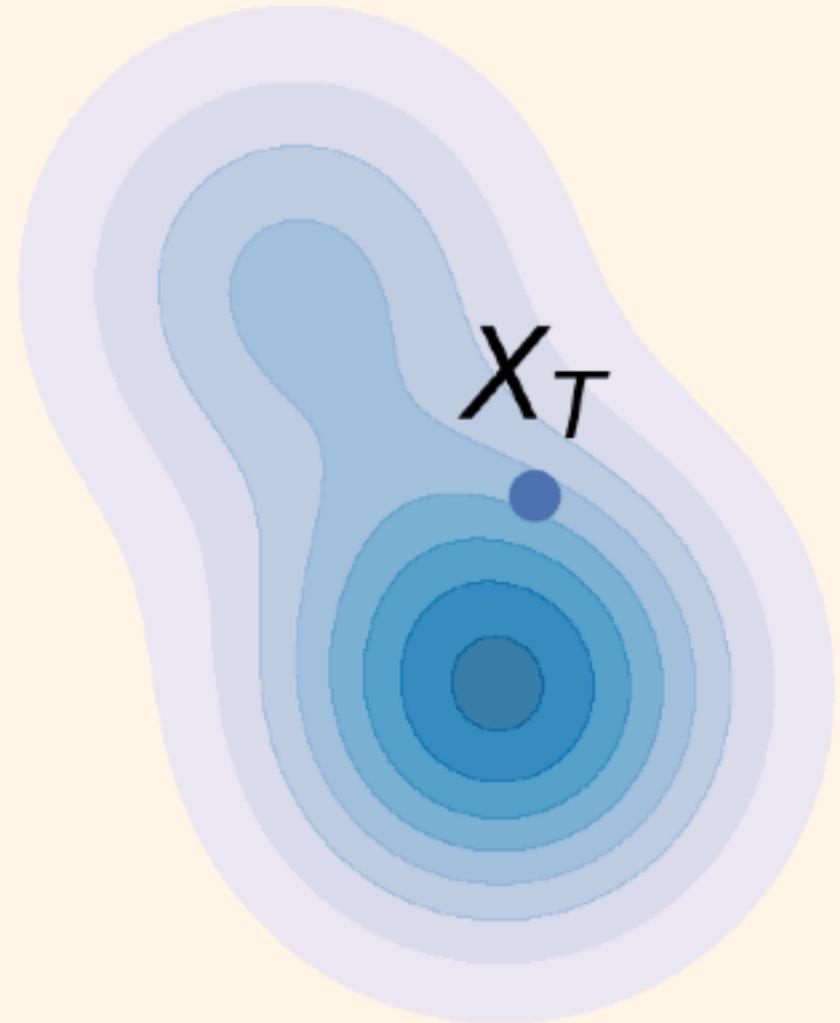
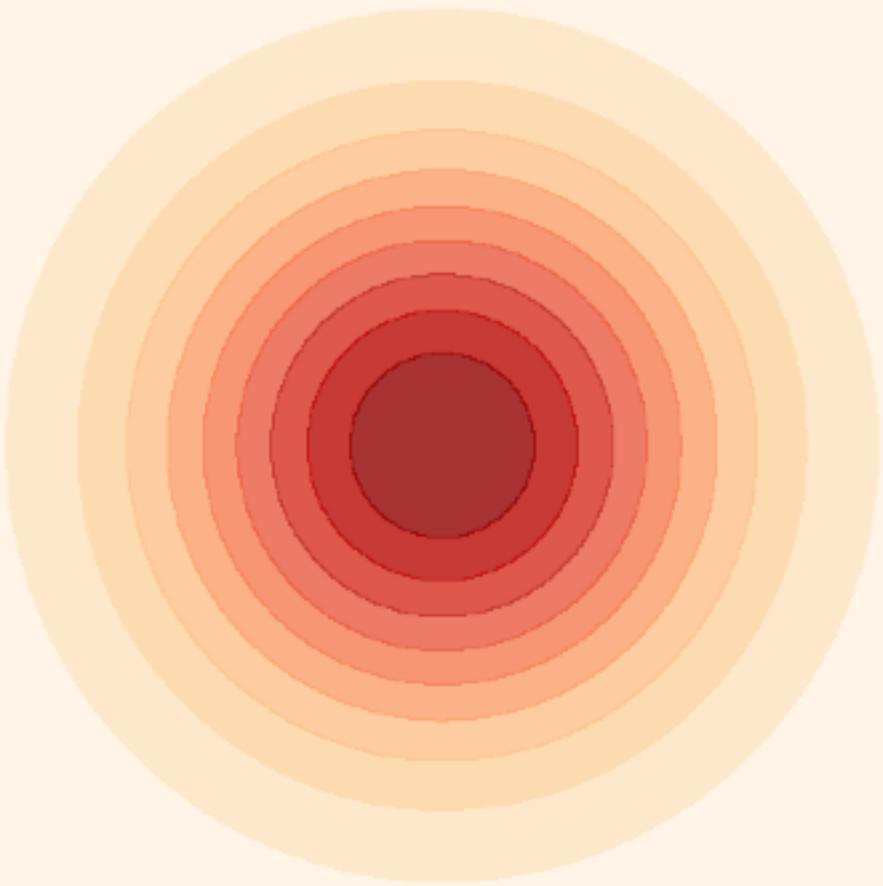


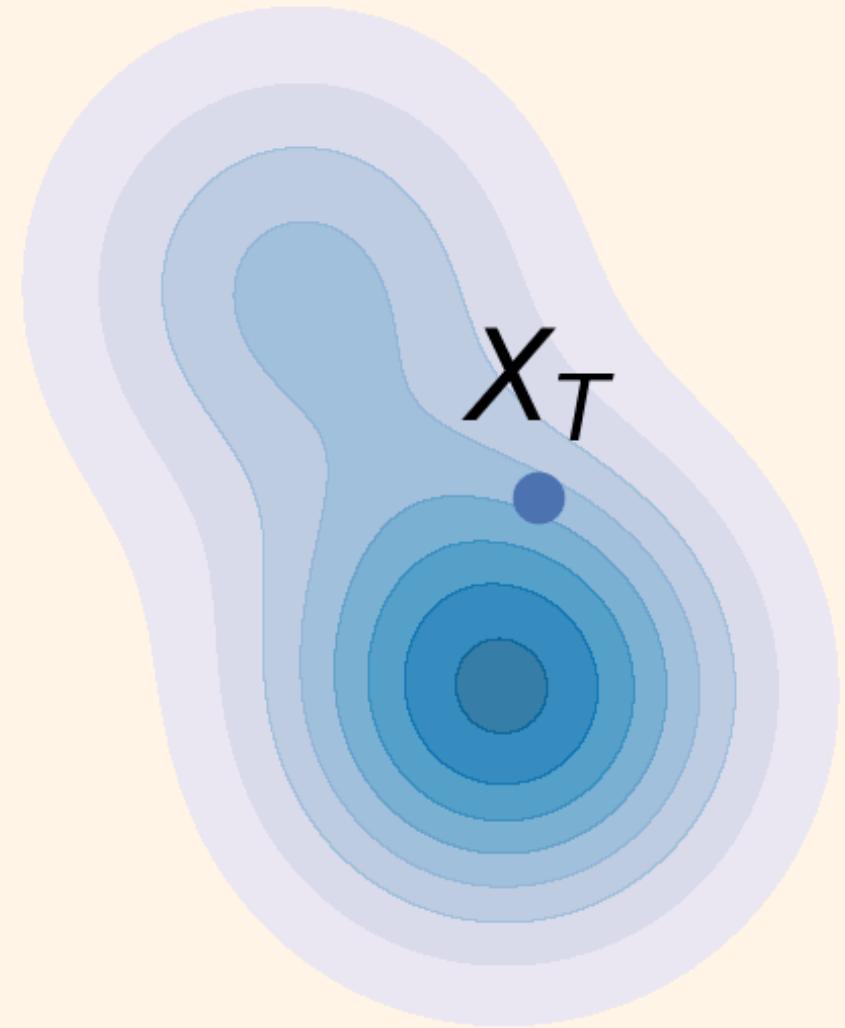
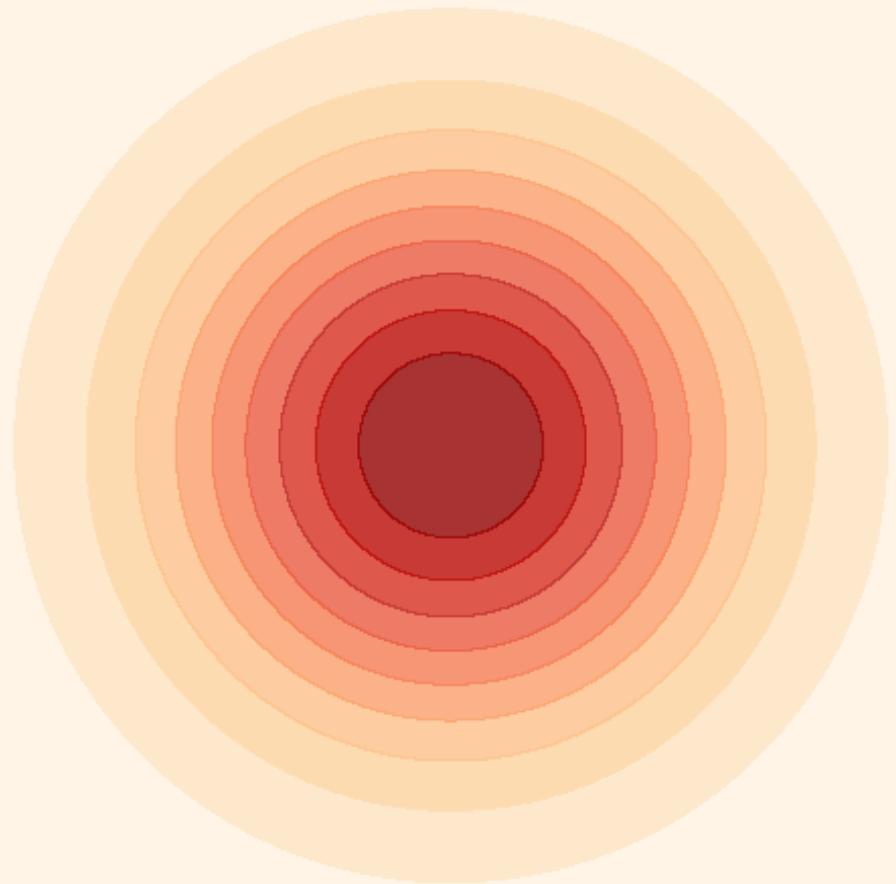
 $x_t$  $x_T$  $x_0$











# Supervising Process

Requirements:

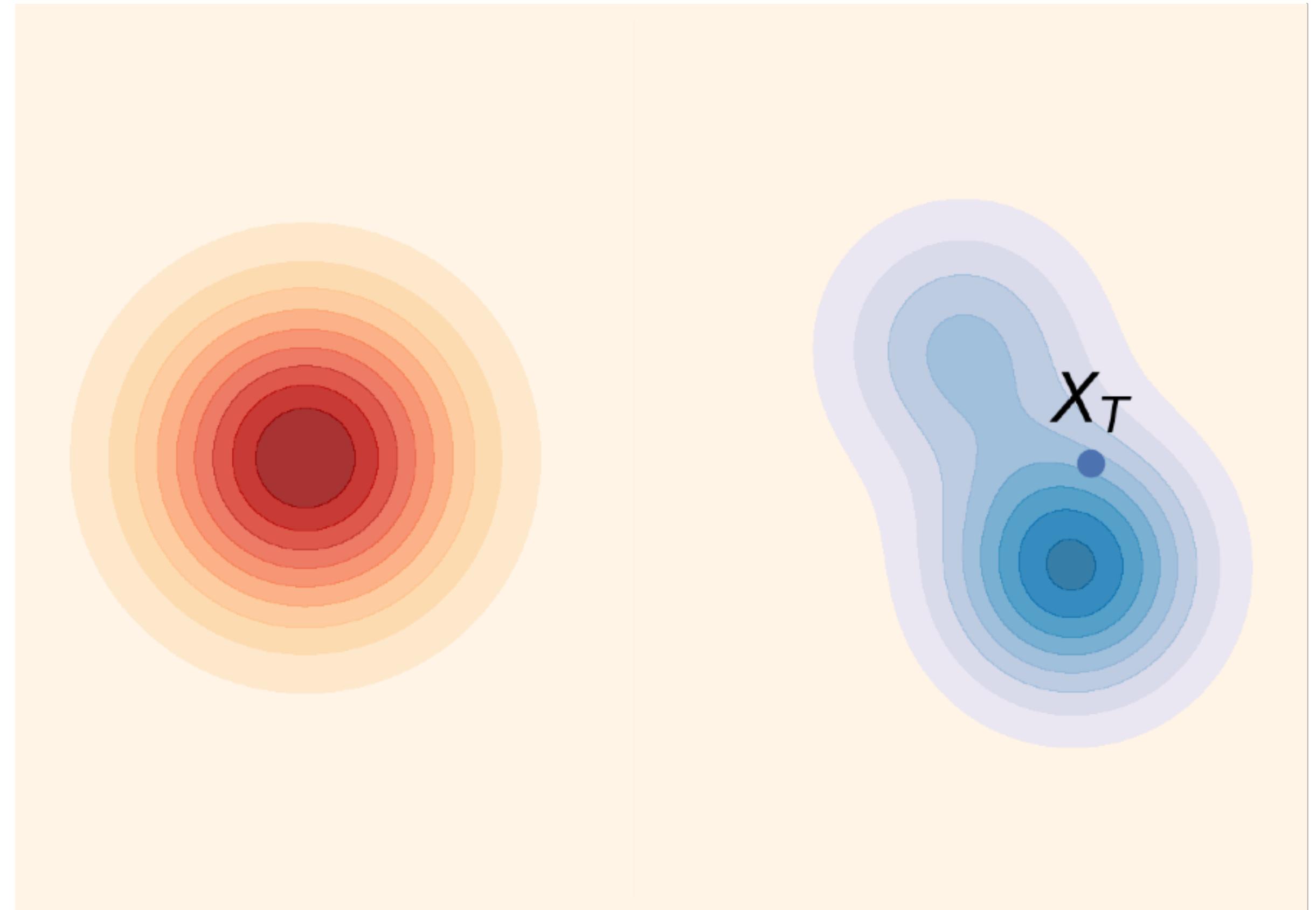
$X_t$  interpolate source (noise) and target (data).

Example:

**Linear process**

$$X_t = \left(1 - \frac{t}{T}\right) X_0 + \frac{t}{T} X_T,$$

Where  $X_0 \sim \mathcal{N}(0, I)$  and  $X_T \sim p_T$ .



# Parametrization

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

**Noise prediction:**  $Y = X_0$ .

