$$Bel(x_t) = p(x_t \mid u_{0:t}, z_{0:t})$$

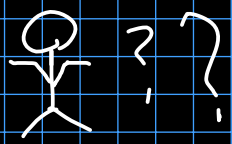
- Parametric

$x_t \sim N(\mu, \Sigma)$

$\sim Uni(\quad)$

$\sim Bi(\quad)$

Non-parametric



Particles: samples from state space

Importance Filter

$$w_t^{[i]} = \frac{\text{target } d}{\text{prop } d} \leftarrow \frac{bel(x_{0:t})}{p(x_t \mid x_{t-1}, u_t)\, bel(x_{0:t-1})}$$

Predict / update

Motion Model

Normal Dist. odom measurement as mean