EXAMPLES:

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- **Identity kernel:**

$$K(x, \mathrm{d}x') = \delta_x(\mathrm{d}x') \qquad \Longleftrightarrow \qquad \begin{array}{l} \texttt{1. Input } X \\ \texttt{2. Return } X' = X \end{array}$$

- **Transport kernel:** Given $T : \mathbb{X} \to \mathbb{X}$

$$K(x, \mathrm{d}x) = \delta_{T(x)}(\mathrm{dx}') \quad \Longleftrightarrow$$

```
1. Input X
2. Return X' = T(X)
```

- **Independent kernel:** Given $\eta \in \mathscr{P}(\mathbb{X})$

$$K(x, \mathrm{d}x') = \eta(\mathrm{d}x') \quad \Longleftrightarrow$$

```
1. Input X
2. Return X' ~ η
```

- **Random Walk:** If $\mathbb{X} = \mathbb{R}^d$

$$K(x, \mathrm{d}x') = N(\mu(x), \Sigma(x), \mathrm{d}x') \quad \Longleftrightarrow$$

```
1. Input X
2. Return X' ~ N(μ(X), Σ(X))
```

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MARKOV KERNELS V3: OPERATORS