SAMPLING: POTENTIALS

10

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$$\pi(x) = \frac{\exp(-\beta U(x))}{Z(\beta)}$$

- $U : \mathbb{X} \to \mathbb{R}$ is the potential energy, encoding the physics of a system

$$\gamma(x) = \exp(-\beta U(x))$$

- Normalising constant is the partition function

$$Z(\beta) = \int_{\mathbb{X}} \exp(-\beta U(x)) \mathrm{d}x$$

- Original formulation of sampling problem came from statistical mechanics

- β is the inverse-temperature of a system

- We will often interpolate between density and log-space

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