Covariance-guided proposal

MCMC

- if target is Gaussian (with known parameters), can pick perfect proposal with zero rejection rate and arbitrary correlation

•if target close to Gaussian, can use same proposal and expect high acceptance rate


Metro

- if $X \sim N(\mu, \Sigma)$, have perfect proposal by adapting the method from Candès, Fan, Janson and Lv (2018) into our framework

•calculate first two moments of X, use Gaussian-perfect proposal

$$X^* \mid X \sim N(\mu + \rho(X - \mu), \sigma^2(1 - \rho^2))$$

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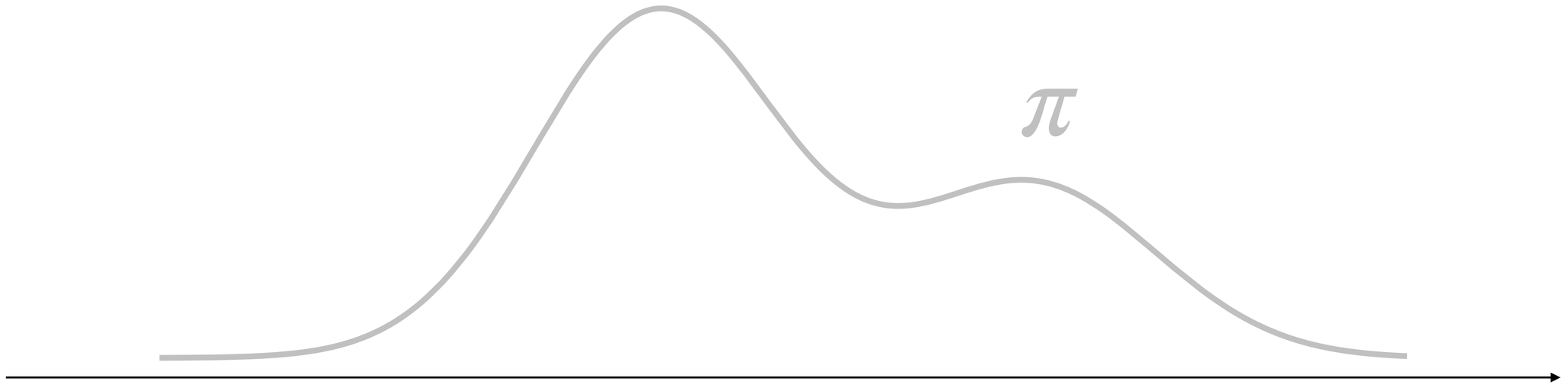
Mutiple-try Metropolis (MTM)



Liu, Liang, and Wong (2000)