Thermodynamic Metrics and Optimal Paths

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I t d ct . F_OF_1 ~200 meV $1k_BT \approx 25$ meV k_B $T \sim 300$ K

$$\square(x|\boldsymbol{\lambda}) = \exp\square[F(\boldsymbol{\lambda}) - E(x;\boldsymbol{\lambda})];$$

$\square = 1/k_B T$ … T … $F(\boldsymbol{\lambda}) \equiv -k_B T \ln\sum_x \exp\{-\square E(x;\boldsymbol{\lambda})\}$ … $E(x;\boldsymbol{\lambda})$ … x … $\boldsymbol{\lambda}$ … $\boldsymbol{\lambda}$ … t c $\boldsymbol{\Lambda}$ … [

$$\mathcal{P}_{ex}(t_0) = \Box \left.\frac{d\boldsymbol{\lambda}^T}{dt}\right|_{t_0} \cdot \int_{-\infty}^{t_0} dt' \frac{d\boldsymbol{\Sigma}^{(\boldsymbol{\lambda}(t_0))}(t_0 - t')}{dt'} \cdot [\boldsymbol{\lambda}(t_0) - \boldsymbol{\lambda}(t')]:$$

$$\mathcal{P}_{ex}(t_0) = \Box \left.\frac{d\boldsymbol{\lambda}^T}{dt}\right|_{t_0} \cdot \int_{-\infty}^{t_0} dt' \boldsymbol{\Sigma}^{(\boldsymbol{\lambda}(t_0))}(t_0 - t') \cdot \left.\frac{d\boldsymbol{\lambda}}{dt}\right|_{t'};$$

$t' = t_0$

$t' = -\infty$