Input Energy Matrix and Perturbed Energy Matrix

	state index	energy function	configurations from state 1			configurations from state 2			configurations from state M		

sampled states

$$x_1^1 \quad \dots \quad x_1^{n_1} \qquad x_2^1 \quad \dots \quad x_2^{n_2} \qquad x_M^1 \quad \dots \quad x_M^{n_M}$$

State index 1, energy function $U_1(\cdot)$:

$$\begin{pmatrix} U_1(x_1^1) & \cdots & U_1(x_1^{n_1}) \\ \vdots & \ddots & \vdots \\ U_M(x_1^1) & \dots & U_M(x_1^{n_1}) \end{pmatrix} \begin{pmatrix} U_1(x_2^1) & \cdots & U_1(x_2^{n_2}) \\ \vdots & \ddots & \vdots \\ U_M(x_2^1) & \dots & U_M(x_2^{n_2}) \end{pmatrix} \dots \begin{pmatrix} U_1(x_M^1) & \cdots & U_1(x_M^{n_M}) \\ \vdots & \ddots & \vdots \\ U_M(x_M^1) & \dots & U_M(x_M^{n_M}) \end{pmatrix}$$

State index M, energy function $U_M(\cdot)$

perturbed states

State index 1, energy function $U'_1(\cdot)$:

$$\begin{pmatrix} U'_1(x_1^1) & \cdots & U'_1(x_1^{n_1}) \\ \vdots & \ddots & \vdots \\ U'_L(x_1^1) & \dots & U'_L(x_1^{n_1}) \end{pmatrix} \begin{pmatrix} U'_1(x_2^1) & \cdots & U'_1(x_2^{n_2}) \\ \vdots & \ddots & \vdots \\ U'_L(x_2^1) & \dots & U'_L(x_2^{n_2}) \end{pmatrix} \dots \begin{pmatrix} U'_1(x_M^1) & \cdots & U'_1(x_M^{n_M}) \\ \vdots & \ddots & \vdots \\ U'_L(x_M^1) & \dots & U'_L(x_M^{n_M}) \end{pmatrix}$$

State index L, energy function $U'_L(\cdot)$