$ISIS(n, m, q, R_B)$ represented with $A\bar{x} = \bar{y}$

$A \in \mathbb{Z}_q^{n \times m}$ (uniform)

$\bar{x} \in \mathbb{Z}_q^m \quad \{\bar{x} \mid \|\bar{x}\|_\infty \leq B\}$

$\bar{y} \in \mathbb{Z}_q^n$ (uniform)

$ISIS(n, m, q, R_B + \bar{\delta})$ represented $A'(\bar{x}' + \bar{\delta}) = \bar{y}'$ "same as above"

$\forall \bar{\delta} \in \mathbb{Z}_q^m$

Some Linear Algebra shows

$A'(\bar{x}' + \bar{\delta}) = \bar{y}'$

$= A'\bar{x}' + A'\bar{\delta} = \bar{y}' \Rightarrow A\bar{x}' = (\bar{y}' - A'\bar{\delta})$

Therefore if $(\bar{y}' - A'\bar{\delta})$ and $(\bar{y})$ are PPT indistinguishable, for all $\bar{\delta}$ and uniform $A, \bar{y}$ then $ISIS_{n,m,q}(R_B)$ is eqv. to $ISIS_{n,m,q}(R_B + \bar{\delta})$

Notice that $\bar{y}' - A'\bar{\delta} = \bar{y}' - \underbrace{\bar{\delta}_1 a'_1 - \bar{\delta}_2 a'_2 - \cdots - \bar{\delta}_m a'_m}$

Then for $m >> n$ and q Prime — Is uniform

A uniform vector minus another uniform vector is uniform.

Therefore both ISIS instances are eqivalent.