# 1   Approximation Formula

Per Core energy consumption is equal to a proportion of consumed package(CPU) usage. Therefore, per core usage is monitored in order to approximate per Core energy consumption.

$Core_{CPU} \in [0,1]$ and $Package_{CPU} = \sum\limits_{i=0}^{n} Core_{i:CPU}$, where $n$ is the total cores in a package.

Core proportion or weight is determined by *core usage* over *package usage*.

$Core_{i:weight} = \frac{Core_{i:CPU}}{Package_{CPU}}$

For Core energy consumption take the product of Core weight and Total Energy consumption during an epoch.

$Core_{i:energy} = Core_{weight} * Energy_{Total}$