

## Doppler Effect for Calculation vs Experiments

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The data we are using for MCNP has been prepared at 293.6K (.0253 eV). If the experiment was performed at 25 deg C, what is the corresponding shift in k-eff?

We computed k-eff at 293.6K and at 600K using the continuous version of MCNP with preVII cross sections at 332.6 mb for the hydrogen capture. The shift in k-eff was

$$\begin{aligned} & 1.00023 \\ & - .97372 \\ = & .02651 \\ & / 306.4 \\ = & .000086521 \\ & \times 4.6 \\ = & .00040 \end{aligned}$$

For LCT6-6, the change was from .99965 to 1.00023, giving a shift from calculation to experiment of .00009.

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