According to Prof. Baxter's estimates, the uncertainty in the WT melting temperature $T_{m,WT}$ (DSC) is $\pm 0.3\,°C$ ~~[illegible]~~ because this was performed in triplicate. The $T_{m,mut}$ (DSC) values have a higher uncertainty of $\pm 1.0\,°C$ because they were only performed once.

In our Methods section, we derive:

$$\Delta\Delta G_{fold}(T) = T\left[\Delta H_{fold}\left(\frac{1}{T_{m,WT}} - \frac{1}{T_{m,mut}}\right) + \Delta C_p \ln T_{m,mut} - \Delta C_p \ln T_{m,WT}\right] - \Delta C_p\left(T_{m,mut} - T_{m,WT}\right)$$

Here, T, ΔH_{fold}, and ΔC_p are known constants with no uncertainty. The error propagated to $\Delta\Delta G_{fold}$ thus depends on uncertainties $\delta T_{m,mut}$ and $\delta T_{m,WT}$:

$$\delta^2 \Delta\Delta G_{fold} = \underbrace{\left(\frac{\partial \Delta\Delta G}{\partial T_{m,WT}}\right)^2_{T_{m,mut}} \delta^2 T_{m,WT}} + \left(\frac{\partial \Delta\Delta G}{\partial T_{m,mut}}\right)^2_{T_{m,WT}} \delta^2 T_{m,mut}$$

this 1st term is

$$\left(T\Delta H_{fold}\left(\frac{-1}{T_{m,WT}^2}\right) - T\Delta C_p\left(\frac{1}{T_{m,WT}}\right) + \Delta C_p\right)^2 \delta^2 T_{m,WT}$$

the 2^{nd} term is:

$$\left(-T\Delta H_{fold}\left(\frac{-1}{T_{m,mut}^2}\right) + T\Delta C_p\left(\frac{1}{T_{m,mut}}\right) - \Delta C_p\right)^2 \delta^2 T_{m,mut}$$

---

simplifying...

$$\delta^2 \Delta\Delta G_{fold} = \left(\frac{-\Delta H_{fold}}{T}\left(\frac{T}{T_{m,WT}}\right)^2 + \Delta C_p\left(1 - \frac{T}{T_{m,WT}}\right)\right)^2 \delta^2 T_{m,WT}$$

$$+ \left(\frac{\Delta H_{fold}}{T}\left(\frac{T}{T_{m,mut}}\right)^2 - \Delta C_p\left(1 - \frac{T}{T_{m,mut}}\right)\right)^2 \delta^2 T_{m,mut}$$

~~If we're interested in $\delta^2\Delta\Delta G_{fold}$ for the WT T_m.~~

uncertainty in $\Delta\Delta G_{fold}$ is

$$\sqrt{\left(\qquad\qquad\right)^2 \delta^2 T_{m,WT} + \left(\qquad\qquad\right)^2 \delta^2 T_{m,mut}}$$