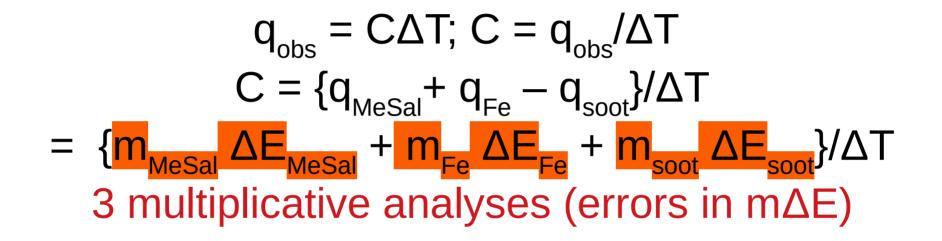# Propagation into the Calorimeter Constant

$$q_{obs} = C\Delta T; \quad C = q_{obs}/\Delta T$$

$$C = \{q_{MeSal} + q_{Fe} - q_{soot}\}/\Delta T$$

$$= \{m_{MeSal} \Delta E_{MeSal} + m_{Fe} \Delta E_{Fe} + m_{soot} \Delta E_{soot}\}/\Delta T$$

Uncertainties: Masses: 0.0003g

(remember to propagate errors from mass-by-difference measurements)

ΔE: 1 in the last significant figure

ΔT: Either: 0.004°C

OR use propagation of error from least-squares analysis (use

LINEST to find S for slope/int.)

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3 multiplicative analyses (errors in mΔE)

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3 multiplicative analyses (errors in mΔE)

Followed by an additive analysis (error in q)

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3 multiplicative analyses (errors in mΔE)

Followed by an additive analysis (error in q; also error in ΔT by subtraction)

Followed by a multiplicative analysis (error in C)