

Lab Exercise Estimation and More

Terry Sturtevant

Wilfrid Laurier University

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Place bounds on the sizes of systematic errors and predict their effects
- Identify sources of random error
Calculate uncertainties in repeated measurements and determine the optimal number of trials for a given instrument

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Suggest ways to improve an experiment, based on uncertainties

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Identify whether or not quantities agree within their uncertainties
Suggest ways to improve an experiment, based on uncertainties
- **Write a professional lab report, incorporating all of the items above**

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- Coming up with values which, even though imprecise, are reasonable, is important.

Estimation

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Often this can be done by comparison to similar known quantities

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- ② Replacing a calculation with a simpler one; such as using the median instead of the average
- ③ Using a single data point in a calculation instead of the aggregated results.

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One example of this is in determining *effective uncertainties* in measurements.