

AC Circuits Lab Report Guidelines

Background:

- Introduces AC circuits and AC ohm's law, defines complex impedance
- Basic component impedances, parallel and series combos
- Magnitude and phase of complex impedance

Apparatus:

- Circuit diagram of test circuit
- How are raw measurements converted to desired quantities
- Reasonable estimate of measurement uncertainty for $|z|$, ϕ , f , stated and justified

For each box (three boxes, at least one resonant):

Model:

- Circuit diagram of model
- Component parameters clearly stated/labelled
- Impedance equation clearly stated and referenced
- Uncertainty clearly stated and referenced

Impedance Magnitude Plot:

- Experimental data points
- Theoretical curve corresponding to model (eqn clearly referenced)
- Units and axes well chosen and clearly labelled, legend or caption labels curves

Impedance Phase Plot:

- Experimental data points
- Theoretical curve corresponding to model (eqn clearly referenced)
- Units and axes well chosen and clearly labelled, legend or caption labels curves

Analysis:

- How were model parameters determined
- Plots have error bars
- How well does model fit data (quantitative)