Endurance Data

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Sampling Rate
- Sampling Rate vs Natural Frequency vs Transient Response Time
  - Want Fs ~ 2*Fn or 3-4 samples on rising edge
  - Nyquist Sampling Theorem
- Signal to Noise (SNR) increases with oversampling
- Undersampling leads to transient behaviors being missed entirely
- Oversampling also leads to too much data

Filtering
- If oversampled filtering may be used to improve SNR.
- Low Pass Filters (LPF) are ok but there are better options
- Smoothing specific filter such a Savitsky-Golay (SG) are better (sgfilt())
- Matlab filters are easily designed in the "Filter Builder", "Filter Designer", and "Signal Analyzer"
- Filtering is an art and not a science at the end of the day. Please always run filters by multiple people to make sure there is a standard
- Do not compare the same type of signal that was run through different filters!

Matlab script formatting
- Header
- Import & Organization
- Filtering if needed
- Basic Plot
- Analysis
- Plot Analysis
- Repeat the last two steps

More complex analysis needs a less linear script when looking at huge datasets which lends itself to GUI.