LosAlamosMatlashov2011CoilSensitivityPrediction.m

* Calculates the sensitivity from scratch and compares it against a saved measurement spectra and a simulated gain (includes the effect of the filters) imported from TINA. All this extra info is stored in “temp1.mat” file

Main\_labviewNoiseAnalis.m

* Draws an smoother Spectra (pwelch()) for presentation.

MainSensiTestMultiturnDetector.m

* Gets LabView Helmholtz coil sensitivity files (signal 1 = detected signal; signal 2 = current through the Helmholtz coils (It is actually the voltage measured across a resistor placed in series with the coils (2.2 ohms in the initial case))).
* Calculates the field gain (dV/dB) from the experiment.

Please note that the gains calculated by the Matlab files don’t introduce the effect of the filters. This is like this because we want to analyse the sensitivity across all frequencies. In reality, low pass and high pass filters are required to avoid noise, increase dynamic range (high pass filter cancels the offset at the output of the ULN amplifiers) and reduce aliasing (Low pass filter). This filters are introduced once the desired frequency range is decided.

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