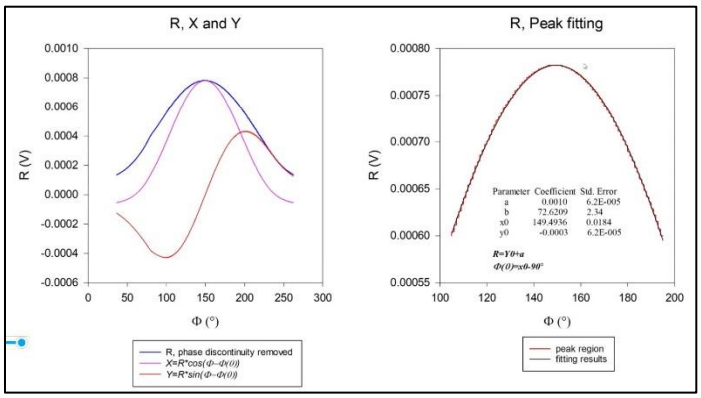
DSG – HDice Meeting

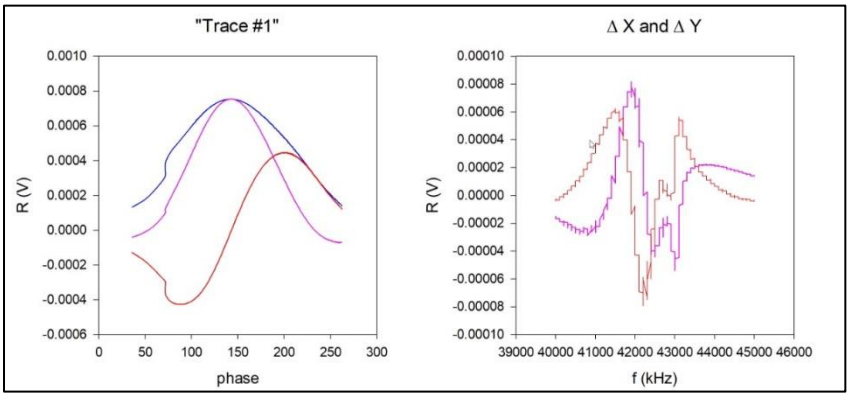
Date: July 30, 2020
Time: 2:00PM – 2:30PM

Attendees: Peter Bonneau, Aaron Brown, Pablo Campero, Tyler Lemon, Marc McMullen, Xiangdong Wei

1. Discussed data acquired with fsNMR program
    - 1.1. Reviewed plots generated by Xiangdong Wei using acquired data.
    - 1.2. Discussed source of discontinuity in data acquired in first cycle.
        - 1.2.1. Discontinuity thought to be caused by heating of cables in cryostat or heating of instrumentation in RF Box.
        - 1.2.2. Discontinuity not seen in any other cycle.



Screenshot of plots shared by Xiangdong Wei for averaged data.
Left plot is of R, X, and Y vs. Phase. Right plot is zoomed-in view of R's peak with its peak fit.



Screenshot of plots shared by Xiangdong Wei for first cycle of data used in averaged data plots.
Left plot is of R, X, and Y vs. Phase. Right is X and Y vs frequency at which data was acquired.

2. Discussed items to investigate in fsNMR program
    - 2.1. Averaged phase plot still not displaying in red.
    - 2.2. Raw data does not appear to be saved.
        - 2.2.1. Data logged for raw data matches data for scaled data.
    - 2.3. Tyler Lemon will investigate and debug issues.

3. Additional “data playback” program requested
    3.1. Xiangdong Wei requested an additional program to allow users to select which cycles to use in final averaged data.
    3.2. Goal of program will allow user to remove runs that are excessively noisy.
        3.2.1. Noise could be caused by cable heating, bumping instrumentation, or other unforeseen event.
    3.3. Tyler Lemon will start development of program.

4. Zurich lock-in amplifier
    4.1. Xiangdong Wei and HDice Group are setting up the lock-in amplifier to further test its capabilities.
    4.2. Problems getting lock-in amplifier on network.
    4.3. So that DSG can assist in problem, Xiangdong Wei will send DSG the MAC address of lock-in amplifier.

5. UITF “Run 0” is ongoing
    5.1. Run 0 is mainly a test of Accelerator’s UITF setup, not HDice equipment.
    5.2. Issues with UITF electron gun holding up tests.