DSG-HDice R&D Meeting Minutes

Date: October 9, 2020
Time: 11:00AM – 11:30PM

Attendees: Peter Bonneau, Pablo Campero, Brian Eng, Tyler Lemon, Amrit Yegneswaran

1. Discussed HDF5 file conversion and upload to the Zurich lock-in amplifier and the issues faced
    1.1. Tyler Lemon will write a more detailed overview of why HDF5 files are needed for in with the lock-in amplifier and the issues that have happened
    1.2. When Zurich lock-in amplifier creates an HDF5 file, it adds several attributes that it looks for when the file is loaded back to the lock-in amplifier
    1.3. If all attributes do not match what the lock-in amplifier is expecting, it returns an error
    1.4. Currently, Tyler Lemon is using an HDF5 file editor to manually edit files and see what attributes and data sets are needed
        1.4.1. After what attributes and data sets are determined, an automated program will be made that only requires the user to input a file containing data to put into the HDF5 file.

2. HDice was given a trial period for the boxcar averager by Zurich
    2.1. Date of trial period has yet to be determined.

Zurich Lock-In Amplifier-Based fsNMR System Diagram

NOTE:
Zurich Lock-In Amplifier has two
internal, independent lock-in
amplifier circuits (signal
generator, output amplifier,
lock-in amplifier). Only one is
used for fsNMR tests

Tyler Lemon
Detector Support Group
October 2, 2020