LabVIEW Based Software for Recording Electric Organ Discharges from Weakly Electric Fish

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Mormyrid fish produce electric organ discharge (EOD) pulses in water with a specialized electric organ, which is used in communication and navigation. To better understand the behavior of these fishes, accurate recordings of their EOD behavior are critical. We developed software with the goal of recording these electrical organ discharges (EODs) over a long period of time with a high resolution and with limited hardware capabilities. Using LabVIEW (National Instruments software), we developed a software program capable of recording and visualizing EOD behavior in real time. The recorded data needs to be recorded into some type of storage to be display again in the future with a large amount of data points. The user needs a display for the data in real time while the recording is in process. The program needs to be user friendly because most users will come from a non-programming background. Due to limited hardware capabilities, the program needs to be robust to handle possibly large amounts of data collected for long periods of time or really large sample rates for a moderate amount of time. This software will enable any one with limited hardware to graph and discover weaker electric organ discharges in higher resolution.