**Isosbestic Fit**

-purpose

-methods

-linear

-biexponential

-least squares regression

-fit isosbestic to signal, or other way around?

-Photobleaching artifact vs movement artifact. Curve fitting

**Quality Control**

-Doric and TDT both use quality control measures, but they differ

-Doric: Plotting residuals of signal X control correlation

-TDT: “Q score” in Synapse software

-Detect and reject recordings with unstable light path (loose subject cable)

-For 2 colour recordings, consideration of channel bleedthrough? Would this be a significant problem? Any way to detect it mathematically independently from the “real” channel cross-correlations?

**Noise Removal**

-Butterworth

-other one?

-zero-phase filters?

**ΔF/F and Normalization**

-Different baselining and normalization approaches.

-What is appropriate for the dataset/experimental design?

-To z-score or not to z-score?

-Different z-score approaches

-Area under the curve

**Peak Detection**

-Peak detection could mean different things depending on the user, the experimental design, and the dataset

-Peak detection could mean simply detecting the maximum signal within a PETH timelocked to a discrete behaviour

-Alternatively, peak detection could mean detecting all local maxima throughout a session, or throughout epochs of a session containing a given behavioural state (e.g. freezing vs no freezing in fear conditioning)

-there are different features that can be analyzed for peaks e.g absolute height, amplitude/prominence, width, and frequency. Which of these features are biologically relevant in a given experimental context or with a given biosensor?

-There are also different peak detection parameters, thresholding, and filtering etc

-filter out large, narrow transients like GuPPy? What if the data are already low-pass filtered?

-threshold away smaller fluctuations (also like GuPPy)?

**Determining which features of a photometry signal to focus your analysis on**

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-multiple linear regression to find correlations between behaviour and multiple signal features?