Analysis of Respiration

This folder contains the following files related to the analysis of respiration data using Spike2 v 8.09 or higher. They can be sub-divided into 3 functional groups:

Calibrate air flow

CalZero 04.s2s
This script can be used to remove unwanted zero offsets from the output of a pneumotach by modifying the sample configuration before recording syringe strokes. The script toolbar has a *Help* button which displays the user guide for the script in the log view.

PTCal 809a.s2s
script for calibrating a pneumotach

PTcal v8.pdf.
user guide for *PTcal* script

PT cal config.s2cx
an example sample configuration suitable for recording syringe strokes for PT calibration

PTCal 3l syringe strokes.smrx /s2rx
A Spike2 data file showing a recording of multiple strokes of a 3 litre syringe. You can use this file to familiarise yourself with the flow calibration procedure

Resp rec Config eg.s2cx
An example sample configuration suitable for recording respiratory data. Copy the PT calibration to a sampling configuration such as this one when prompted by the *PTCal* script.

Generate flow and volume channels on-line

FV_Online v11a.s2s
Script to record respiratory data and convert raw pneumotach output into *atps* and *btps* flow signals on-line

Pulse.pls
Allows the *FV_online* script to generate TTL outputs for control external equipment if a selected waveform crosses a user-defined threshold.

FV_Online v11b.pdf
User guide for the *FV_Online* script.

Analyse Respiratory data

Resp 80k.s2s
Main script for off-line analysis of respiratory data.

Resp v8b.pdf
User guide for *Resp* script

Resp example.smrx /s2rx
Example file containing respiratory data. You can use this file to familiarise yourself with the *Resp* script before attempting to analyse your own data.

InvertChan 8.s2s
The *Resp* script requires a flow signal with inspired flow represented as *negative* deflections of the flow trace. If you have an *atps* flow trace with the opposite polarity, then you can use this script to invert it. You can view the user guide for this script by running it and clicking on the *Help* button on the script toolbar.

WoB v6.s2s
This script takes as its input a Volume *vs.* oesophageal pressure loop diagram created using the *Resp* script. It partitions the loop into inspiratory, expiratory, resistive and elastic components of Work of Breathing (a Campbell diagram). Version 6 of this script copes with hyper-inflation, i.e., the case where FRC is outside the volume-pressure loop. The user guide is displayed when you click the *Help* button on the toolbar.