

Reading ASL 5000 files in new versions of Matlab on 64 bit computers

With ASL having gone out of business, they are no longer supporting reading their files on new computers.

Here is a reasonably pain-free-for-me way of getting a 64-bit Windows 10 computer with the most recent versions of Matlab (with the statistics and signal processing toolboxes) to read ASL .eyd files.

The steps are:

- 1) put the 2 attached ASLFileLib files in a directory called c:\Program Files (x86)\Applied Science Laboratories\DLL
- 2) run a command prompt AS ADMINISTRATOR (via right click run-as-administrator)
cd c:\Program Files (x86)\Applied Science Laboratories\DLL
regsvr32 ASLFileLib2_x64.dll
- 3) put all of the other files in your matlab path somewhere
- 4) use the attached readasl2008.m to read your .eyd file via
p=readasl2008(fnameroot)

This will return a structure in the variable “p” with your data, deblinked using the algorithms I've described in Siegle, G.J., Ichikawa, N., Steinhauer, S.R. (2008). Blink before and after you think: Blinks occur prior to and following cognitive load indexed by pupillary responses. *Psychophysiology*, 45, 679-687.

The structure contains the following fields:

p =

struct with fields:

```
    fname: '3350base.eyd'
    header: [1x1 struct]
    RescaleFactor: 60
    raw: [18222x1 struct]
    raw2: [1x1 struct]
    RescaleData: [1x18221 single] ← Raw pupil at 60Hz
    BlinkTimes: [1x18227 logical] ← Identified blinks
    XmCRX: [18221x1 single]
    YmCRY: [18221x1 single]
    X: [18221x1 single]
    Y: [18221x1 single]
    EventTicks: []
    EventCodes: []
    EventTimes: []
    BlinkTimesXY: [18221x1 logical]
    XmCRXn: [18221x1 single]
    YmCRYn: [18221x1 single]
    NoBlinks: [18221x1 single] ← Pupil data with blinks linearly
    NoBlinksUnsmoothed: [18221x1 single] ← Pupil data with blinks linearly
    XScreenCoords: [18221x1 single]
    YScreenCoords: [18221x1 single]
    Seconds: [1x18221 double]
    Minutes: [1x18221 double]
```

interpolated through (smoothed)

interpolated through (not smoothed)

Please feel free to let me know if this doesn't work for you, especially if we seem to be missing some files, and I can send anything else I'm covertly calling...

Greg