Description

This program is designed for the study of ocular motility functions:
- fixations,
- saccades,
- pursuits,
- optokinetic nystagmus (OKN).

Stimulator:

Universal stimulator **MonPack** and **MonCV3**

They are used to generate the different visual targets (points for adults and images for children) as well as visual stimulations for OKN.

Signal acquisition:

The images of the eyes are analyzed in real time (200 images per second with the high frequency camera) to determine the direction of the gaze and the pupil size. Direction of gaze is measured from the positions of the pupils relative to a reflective dot placed on the forehead.

Specifications

The program can display up to 14 simultaneous channels:
- 2 channels for the stimulation (horizontal and vertical components),
- 12 channels including the position, velocity and acceleration for each of the horizontal and vertical component of each eye.

Parameters used for the acquisition of data are:
- Resolution: 0.2 deg
- Sampling frequency: 200 Hz (with high frequency camera)
- Maximum recording duration: 72 seconds
The program allows the calibration of eye movements (to convert measurements from microvolts to degrees of visual angle).

After the calibration, the program can calculate the eye velocity during saccades and make a detailed analysis including:

- the **amplitude** of the saccade,
- the **maximum velocity**,
- the **average velocity** (over the duration of the saccade),
- the **latency** (time between the stimulus and the beginning of the saccade),
- the **asymmetry** (ratio between the duration of the acceleration phase and the duration of deceleration).

### Analysis of pursuits and nystagmus

The program calculates the velocity gain of the smooth eye movement.

### References