DatLab guide

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This guide through features of DatLab presents an integral component of high-resolution respirometry. For specific applications of DatLab, see:

» MiPNet19.18A O2k start
» MiPNet19.18D DatLab O2k calibration
» MiPNet19.18E DatLab O₂ flux analysis: real-time
» MiPNet12.10 Titration-Injection microPump, TIP2k
» MiPNet17.05 O2k-Fluorescence LED2-Module
» MiPNet15.03 O2k-MultiSensor-ISE
» MiPNet15.05 NO-Manual

1. File

1.1. Open [Ctrl+O] A previously recorded DatLab file is opened. The file type is *.DLD for **D**at**L**ab **D**ata files. It is not possible to open a second file simultaneously. You can do this in a separately opened DatLab programme. If DatLab is connected to the Oxygraph-2k for recording, another DatLab file cannot be opened before disconnecting the O2k and closing the currently recorded file.

1.2. Close [Ctrl+F4] Close a DLD file. A window Save changes to file? pops up offering the options to close the file after saving the changes, or close the file without saving any modifications on the presently open file.

1.3. Save [Ctrl+S] When disconnected from the O2k, save any changes made under the identical file name overwriting the previous file. Such changes do not affect the raw data of the experiment, but relate to calibrations, experimental protocol, marks and events.

1.4. Save and Disconnect [Ctrl+F4] Stop data acquisition and disconnect from the O2k (MiPNet19.18A).

1.5. Save as   When disconnected from the O2k, save the file under a different file name, optionally in a different directory.

1.6. File search [Ctrl+F] yields a list of all files labelled by the experimental code in a selected directory (see Experiment - Edit [F3]). Click on the file to preview the protocol.

1.7. Delete   The decision to delete a file containing no useful data can be made most clearly when viewing the traces. Only available when disconnected from the O2k.

1.8. Import   **DatLab templates** can be imported for O2k-Setups, Graph Layouts, Mark Names, TIP2k-Setups and Marks Statistics Configurations.
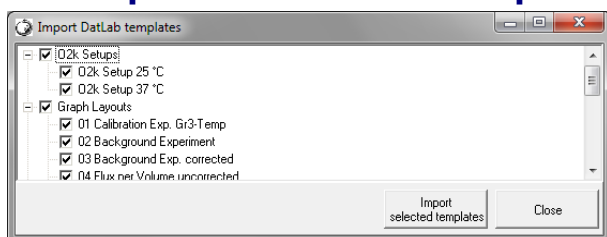
A backup of the default templates is installed in C:\DatLab\DLTemplates. More DatLab template files can be accessed on the OROBOROS USB-flash drive under O2k\DatLab-Install\DL-Templates.

1.9. Export   **Text file (*.csv)** export plots and events to a text file for further use in Excel and other compatible programs.

Events to Text file Export all information in Events to a text file (*.csv). This file may be used as a protocol, including the comments in the Events.

One plot to DatLab 2 analysis Export the oxygen signal (O2 Raw Signal) to a DatLab 2 file (*.DLR); flux is re-calculated in DatLab 2 Analysis, e.g. for oxygen kinetics.

1.10. Exit   Exit DatLab.

Temporary backup files are generated by DatLab in the current user's temp directory, indicated by adding tmp.$$$ to the file name. These files are retained only if the PC has failed during data analysis. During data acquisition, the data are written continuously onto the file, hence backup files are not necessary under these conditions.

2. Oxygraph-2k

| File | Oxygraph-2k | TIP2k | Experiment | Calibration | Gra |

O2k Control   F7
Connect to O2k at start
✓ Show channel: Amperometric, Amp
  Show channel: Potentiometric, pX
  Show channel: Spectrofluorimetric
  Stirrer A On/Off   F11
  Stirrer B On/Off   F12
  Stirrer test   F9
  Light On/Off   F10
  Manage Setups

Oxygraph-2k   Deselect channels ('Show channel') that are not actually recorded. Channels are deselected and shown in grey if no data are available.

O2k-Core applications: Deselect all O2k-MultiSensor channels.

O2k-MultiSensor applications: Select only the specifically used channels.

3. TIP2k

  » MiPNet12.10 Titration-Injection microPump, TIP2k

4. Experiment

For every DatLab file, a protocol is generated automatically in part by communication with the Oxygraph-2k (control settings and calibrations), whereas other information is entered when connected or disconnected to the O2k (type and concentration of experimental sample; medium). The protocol can be viewed and saved to a PDF file.

4.1. Edit experiment [F3]   Information for the experimental protocol. Entries can be edited at any time during the experiment, and all related results will be re-calculated instantaneously with the new parameters.
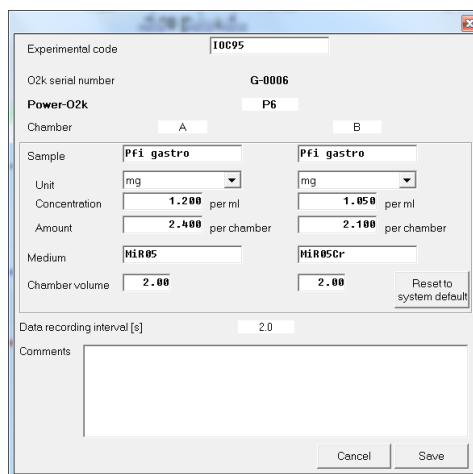
Reset to system default   Initially, the "Edit Experiment" window displays information from the experiment saved last in real-time mode. The Reset buttons are used to reset these entries to system default values.

Cancel   L⌐ Cancel if you want to proceed quickly with the experiment, and edit any time later.

Experimental code   Up to 10 digits. The File Search function [Ctrl+F] lists all files with identical experimental code within a selected directory.

O2k serial number   Read only, set in Oygraph-2k \ O2k Control.

Chamber   Left (A) and right (B) O2k-Chamber.

Experimental code	IOC95	
O2k serial number	G-0006	
Power-O2k	P6	
Chamber	A	B
Sample	Pfi gastro	Pfi gastro
Unit	mg	mg
Concentration	1.200 per ml	1.050 per ml
Amount	2.400 per chamber	2.100 per chamber
Medium	MiR05	MiR05Cr
Chamber volume	2.00	2.00

Data recording interval [s]   2.0

Comments

Cancel   Save

Sample   Enter a short label for the sample used in each chamber. No sample is added in O_2 calibration experiments.

Unit   ▼ Select a unit to express the concentration or amount of sample in the HRR assay.

<u>Million cells</u>   ▼

<u>mg</u>   ▼ - mg of protein, wet weight or dry weight.

<u>Unit</u>   ▼ - a respiratory reference flux [pmol·s^{-1}·ml^{-1}], to normalize flux to a respiratory reference state; or units of enzyme activity for normalization of oxygen flux.

Concentration If you apply a concentration of sample in the assay (e.g. Million cells per ml, or mg mitochondrial protein per ml), then enter the sample concentration. The corresponding amount of sample is calculated on the basis of the O2k-Chamber volume.

Amount If you add a known amount of sample into the sample chamber (e.g. a known weight of a biopsy sample), then enter the sample amount. The corresponding sample concentration is calculated on the basis of the chamber volume shown above.

Medium Name of the incubation medium in the O2k-Chamber.

Chamber volume The default is 2.00 ml. It is important to define the actually used effective volume of the O2k-Chamber for further calculations of oxygen flux.

Data recording interval [s] The data recording interval is displayed (read only); it is selected in the O2k Control window [F7].

Comments For display and printing in the 'View Protocol' window.

Save   Save the changes and close 'Edit experiment'.

4.2. View protocol [Ctrl+F3] The experimental protocol is generated automatically. It displays information about the O2k settings and calibrations, the Edit experiment window and various Events. Time-dependent information can be viewed for both, or a single chamber, and the filter can be selected for viewing minimum information, intermittent by default, or all information. L⤴ Preview to view the protocol, and save as a pdf file.

4.3. Add event [F4]

Events   An event is a defined point in time, labeled by a name (1 to 10 characters). The event is shown by a vertical line in the graph (line style can be modified under 'Graph Options') and the label of the event is shown on the bottom. A short comment can be entered to describe the event in detail.

Set events

[F4]	Real-time: Press [F4] to set an event quickly at the current time of the experiment (e.g. to indicate a manual titration into the chamber). Pressing [F4] defines the time point of the event. Full attention can then be paid to the experiment. Edit the event later.
[Ctrl+L⬟]	Insert an event at any chosen moment of the plotted record of the experiment by placing the cursor in the graph at the selected time point, press [Ctrl] and click the left mouse button [Ctrl+L⬟].
Edit event	The Edit event window pops up after setting a new event at the current time by pressing [F4] or after clicking on any past time point with [Ctrl] and the left mouse button [Ctrl+L⬟].
L⬟	Left click on the name of an existing event to open the Edit event window to edit or Delete event.
Name	Enter an event name of 1 to 10 characters. Short names (e.g. O instead of Open) are recommended.
Text	Further information can be entered into the text window.

Chamber ○ A ○ B ◉ Both   Select Chamber A, B or Both. The Event will be shown on plots for both or one selected O2k-Chamber.
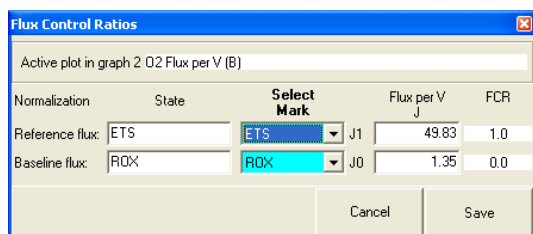
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5. Calibration

5.1. Oxygen, Potentiometric and amperomtric channels

Select a channel to open the associated Calibration window, e.g. B: Oxygen, O2 opens the calibration window for the O2 channel of the right chamber (B).

» MiPNet19.18D DatLab oxygen calibration

5.2. Flux control ratios

Flux control ratios (*FCR*) can be plotted after defining the (maximum) reference flux, J_1 (e.g. ETS capacity, noncoupled), and a (minimum) baseline flux, J_0 (e.g. flux after inhibition by rotenone and myxothiazole, ROX) in the window Calibration \ Flux control ratios. After selecting the appropriate marks, the corresponding fluxes per volume [pmol·s^{-1}·ml^{-1}] are shown, converted to 1.0 and 0.0 in the plot of FCR. The FCR is then plotted as:

$$FCR_t = \frac{J_t - J_0}{J_1 - J_0}$$

5.3. Proton Flux

go Bioblast »http://wiki.oroboros.at/index.php/O2k-pH_ISE-Module

6.   Graph

L⌖ The active graph is highlighted and indicated by the OROBOROS logo. The active graph is selected by a left click into the graph.
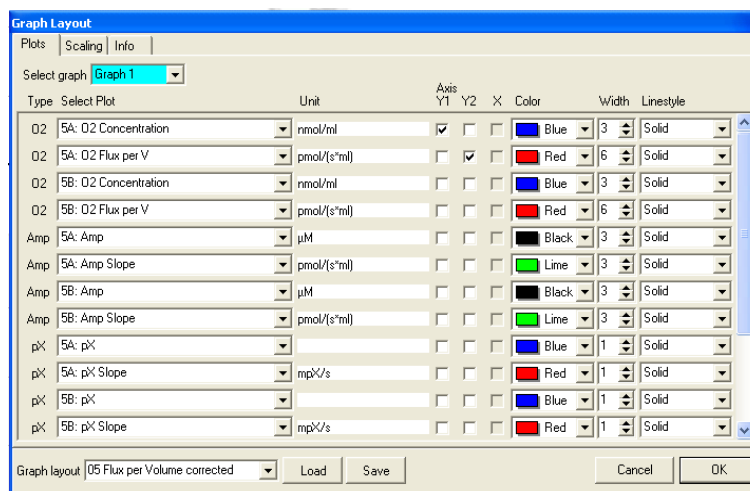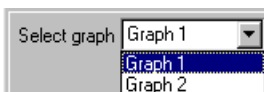
6.1.   Add   A new graph is added at the bottom of the screen. For the new graph, you have to select plots for display [Ctrl+F6].

6.2.   Delete bottom graph
The bottom graph is deleted, which re-appears with the same layout by Add.

6.3.   Graph layout

6.3.1. Graph layout \ Tab: Plots [Ctrl+F6]

▼ Pull down to select any of the defined graphs and load Graph Layout for defining the plots in a graph.

Select plot – ▼ Select the specific plot, the units of which are displayed in the next column. Plots from channels deselected in Oxygraph-2k are not shown.

O₂ Concentration (A and B) ▼

O2 Raw Signal [V]
O2 Concentration [nmol/ml]*
O2 Pessure [kPa]*
O2 Pressure [mmHg]*

O₂ Flux (A and B) ▼

O2 Slope uncorrected [pmol·s^{-1}·ml^{-1}]*
O2 Flux per Volume [pmol·s^{-1}·ml^{-1}]**
O2 Flow per cells [pmol·s^{-1}·10^{-6}]^{***a}
O2 Flux per mass [pmol·s^{-1}·mg^{-1}]^{***b}
O2 Flux per unit [pmol·s^{-1}·ml^{-1}·Unit^{-1}]^{***c}
Flux control ratio [per reference state]^{***d}

*	Accurate results depend on oxygen calibration; edit in [F5]
**	In addition, accurate results depend on correction for instrumental background oxygen flux; edit in [F3].
***	Accurate results depend further on information about sample concentration; edit in [F3]
a	Sample unit in [F3] selected as <u>Million cells</u> ▼
b	Sample unit in [F3] selected as <u>mg</u> ▼
c	Sample unit in [F3] selected as <u>Unit</u> ▼
d	This option is available after defining a reference state in the window Plots \ Flux control ratios

Note: Oxygen flux is expressed in moles of oxygen, O_2, independent of choosing a plot of oxygen pressure or concentration.

Amp (A and B) Signal of a sensor (electrodes, optical sensor) connected to the Amp port on the left (A) or right (B) side of the Oxygraph-2k.

Slope Amp (A and B) Negative slope calculated for the signal of sensor Amp (A and B).

pX (A and B) Signal of electrodes connected to the pX port on the left (A) and right (B) side of the Oxygraph-2k.

Slope pX (A) Negative slope [mpX/s] calculated for the signal of pX electrodes (A and B).

Barometric pressure The continuously recorded absolute (local) barometric pressure [kPa].

Block temperature [°C] The continuously measured temperature of the copper block, housing the two glass chambers.

Env Temp Temperature from internal temperature sensor recording the environmental (room) temperature [°C].

Ext Temp Signal from external PT1000 temperature sensor (optional), "50.000" if no sensor connected [°C].

Peltier power For regulation of block temperature, continuously recorded [% of maximum power].
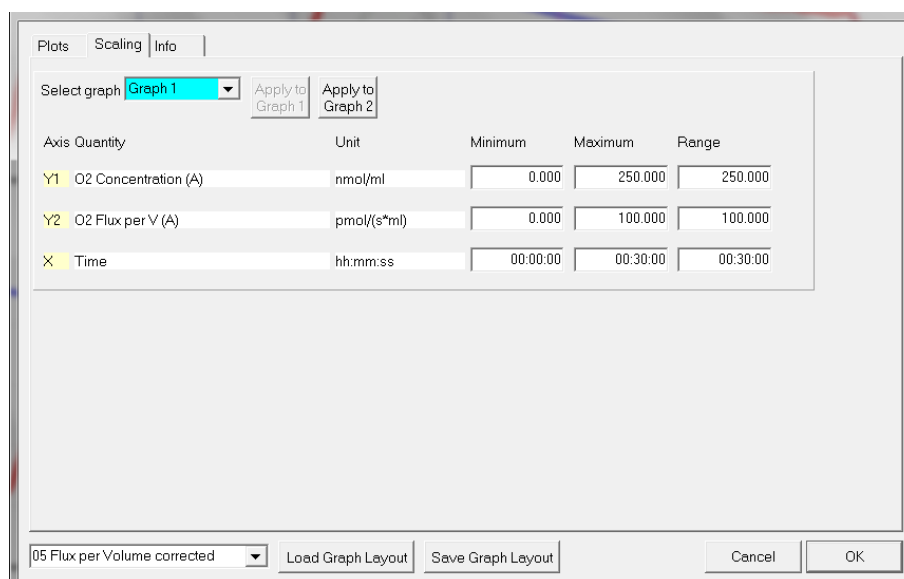
Axis, Y1, Y2 Defines the left (Y_1) or right axis (Y_2) for a plot to be shown by setting or deleting the arrow in the appropriate box.

Color Defines the color of the plot.

Width Defines the line width of the plot.

Line style Defines the line style of the plot. This is only possible when the width is defined as 1.

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6.3.2. Graph layout \ Tab: Scaling [F6]

Left mouse click on the *X*-axis, Y_1- or Y_2-axes opens the F6 window. The F6 window provides flexibility to vary the display of the plotted data according to specific needs. Viewing plotted data in differently scaled graphs, zooming the signal and time scales, and scrolling along the axes of the graph provide maximum information on the current experiment, but do not influence the format of stored data.

Choosing standardized Graph layouts with suitable ranges for the axes for visual evaluation of the results. Selected ranges for the axes changes the appearance of the data dramatically.

Select graph▼ Pull down to select any of the defined graphs for Scaling.

Minimum Defines the minimum axis position (suppression) for the display of data at a constant range.

Maximum Defines the maximum axis position for the display of data at a constant range.

Range The Y_1 axis (left), Y_2 axis (right) and *X* axis (Time [s]; bottom) display data in the ranges defined in the Scaling window.

Select a predefined Graph layout from the options in the pull down menu. Edit the Graph layout name by a L click on the name, and L Save to save the entire graph layout.

Example Y_1-axis: Concentration [nmol/ml=µM]; A range of 200 and Start at 0 is chosen after calibration to show the oxygen concentration in the full range (0-200 µM) without amplification.
Y_2-axis: Flux [pmol·s^{-1}·ml^{-1}]; Range of 60 and Start at 0 shows flux from 0 to 60 pmol·s^{-1}·ml^{-1} when the oxygen signal is calibrated [µM].

X-axis: Range 1:00 h and Start at 35 min presents data starting at 35 min, over a 1:00 h time interval from 35 to a maximum of 1:35 h.

Apply to Graph 2 The chosen scaling is applied to Graph 2.

Standard DatLab graph layouts Select a Layout from the menu for defining initial settings for the Plot [Ctrl+F6] and Scaling [F6] windows.

Save graph layout After editing the settings in the [Ctrl+F6] and [F6] windows, the graph layout may be saved under the old or a new name.

Load graph layout loads a graph layout selected with the drop-down window on the left side of the button.

OK   Activates the graph layout settings.

Arrow keys Independet of the [F6] window, zoom (expansion or compression), pan (time on *X*-axis) and scrol (data on *Y*-axes) using the arrow keys.

[→] or [←] Panning, shift 50% of the time axis to the right or left. During data acquisition, switch off automatic panning to pan backwards without changing the time range.

[Ctrl+→] Magnify the time resolution on the screen (decreasing the time range). [Ctrl+→] expands the data, half the original time range is displayed.

[Ctrl+←] Cover a larger time range on the screen. [Ctrl+←] compresses the data, twice the original time range is displayed. The reference time point is fixed on the origin (left) during zooming in and out.

Scaling of *Y*-axes
L⌐   Select a plot of any graph by a left click onto the label of the plot in the figure legends on the right. The active plot is highlighted. Operations (setting marks, scrolling, calibration) generally apply to the active plot.
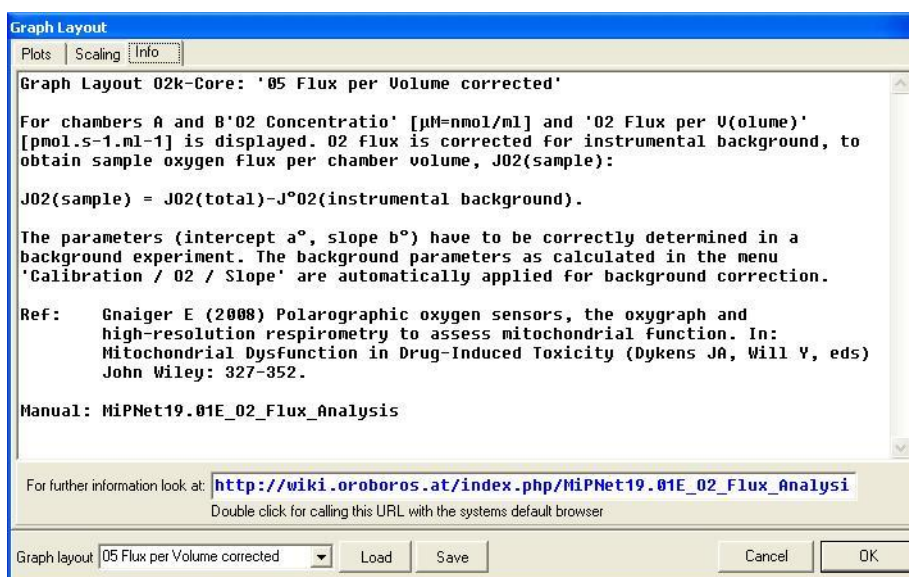
Arrow keys Independent of the [F6] window, zooming (expansion or compression) and scrolling (data on *Y*-axes) are possible by using the arrow keys after selecting a plot. The reference point is fixed on the bottom of the graph. Scale expansion or compression are effected by holding [Ctrl] while pressing the up/down arrow key. Only the active plot is thus modified, while the plot on the other *Y*-axis, and all plots on the other graph remain unchanged.

[↑] or [↓] Scroll up and down the *Y* axis, with a shift of 50% each time.

[Ctrl+↑] Magnify the signal (half the signal range is displayed).

[Ctrl+↓] Cover a larger range on the screen for overview (twice the signal range is displayed).

6.3.3. Graph layout \ Tab: Info

6.4.   Synchronous time axes

✓   This option sets the time axes of all graphs at an identical range and offset, which is particularly useful while panning.

6.5.   Autoscale time axes

Autoscaling overview the entire experimental period.

6.6.   Autoscale Y1 (Y2) axes
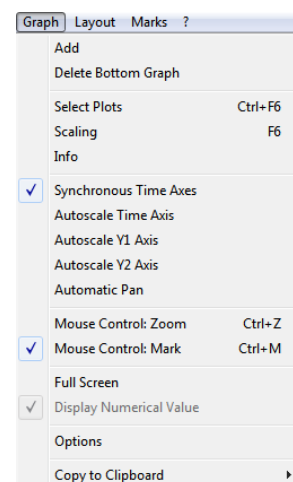
Autoscaling the entire range of measured values.

6.7.   Automatic pan

Toggles automatic Panning on/off, see MiPNet 19.18A, Status line.

6.8.   Mouse control: Zoom [Ctrl+Z]

⊕**Zoom in**   Select 'Mouse Control: Zoom' in the menu or press [Ctrl+Z]. L⊕ click into the graph where you want to zoom in. Place the cursor at the upper lefthand corner of the field for zooming. Hold [Shift],press the left mouse button [Shift+L⊕] and slide the cursor to the lower righthand corner to define the field for zooming in. The text for all axes now indicates the respective range (full scale).

⊕**Zoom out** To return to the original scaling (as defined in the Graph layout), hold [Shift], press the left mouse button and slide the cursor anywhere to the left [Shift+L⊕].

6.9. Mouse control: Mark [Ctrl+M]

The Mark mode is active by default, or can be selected in the menu or by [Ctrl+M]. Specific sections of the experiment can be marked on each plot. Usually, marks are set on the plot for oxygen concentration for calibration (MiPNet19.18D), whereas marks on the plot for oxygen flux are set for exporting average values of flux to a table.
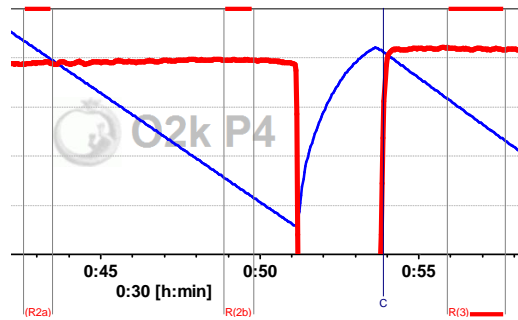
6.10. Full screen [on/off]

✓ The selected graph may be shown alone on the full screen [✓], or together with the other defined graphs [off]. Full screen is particularly useful for a single channel overview and for Copy to clipboard [ALT+G B].

6.11. Display numerical value

✓ **On**   The current numerical values are displayed in the graph for the active plots on the Y_1 axis and Y_2 axis (during data acquisition only).

6.12. Display Power-O2k

✓ **On**   The Power-O2k number (as set in Oxygraph-2k \ O2k Control) is shown in the active graph.

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6.13. Graph options

✓ **Show legend** Lists the quantities plotted on each *Y* axis.

Show legend is changed to the option *off* with a left mouse click. In this case, the names of plots are not shown in the legend.

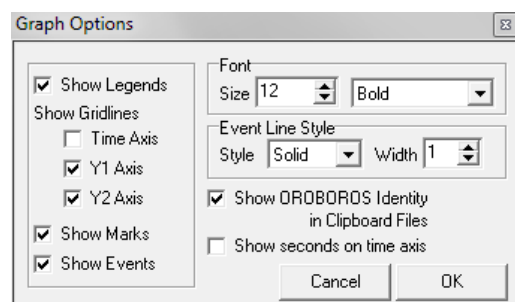**Show gridlines** gives an option to show or hide vertical and horizontal gridlines.

Show marks [on/off] The display of marks can be switched on or off for all graphs, without deleting the marks.

Show events [on/off] The display of events can be switched on or off for all graphs, without deleting the events.

Font   Provides options to change the font size and style of axes labels and numbers.

Event line style can b e modified.

✓ **Show OROBOROS identiy in clipboard files** *Yes!*

✓ **Show seconds on time axis** gives an option to include or exclude the display of seconds on the labels of the time axis.

Copy to clipboard

Select the active graph. In the Graph menu, L� Copy to clipboard, and select the WMF or BMP format (Graph\Copy to clipboard\WMF); [Alt+G B W]. Open the target file (Word, PowerPoint, Paint, etc.), and paste the image data [Ctrl+V].

7. Layout

Any defined graphics Layout can be selected from the Layout menu for defining initial settings for the Plots [Ctrl+F6] and Scaling [F6]. A Layout can be modified and saved under a specific name. In typical standard DatLab graph layouts plots are shown for the left chamber in Graph 1 (top), and for the right chamber in Graph 2 (below). During data acquisition, a 30 min time range is frequently used and adjusted to 1 h during the experiment [F6]. Standard options at start are (MiPNet19.18A):

01 Calibration Exp. Gr3-Temp This is typically the first layout used after switching on the O2k, when performing an oxygen calibration. Oxygen concentration (blue lines, left Y-axis) and O2 slope uncorrected (red lines, right Y-axis) are displayed on the top graph for the left chamber, and below for the right chamber. The third graph (bottom) shows the block temperature on the left Y axis and the Peltier power on the right Y axis. Only when both temperature and Peltier power are constant, the chambers have reached thermal equilibrium. The next step is to observe equilibration of the oxygen signal with a defined gas phase above the stirred aqueous phase ('open' chamber; usually with air as the first step) to perform an oxygen calibration (MiPNet19.18D).

02 Background Experiment For recording O2 sensor calibration and a test for instrumental background oxygen flux. 'O2 Slope uncorrected' is the negative slope of oxygen concentration (multiplied by 1000 to convert to units [pmol/ml]) over time [s]. No correction is applied for instrumental background oxygen flux, $J^\circ_{O_2}$. The uncorrected O2 slope is plotted on the right Y-axis with a scaling to display ±10 pmol·s^{-1}·ml^{-1} and zero in the middle of the Y_2 axis. Zero flux in the 'open' chamber at air calibration indicates stability of the oxygen signal. After closing the chamber, 'O2 Slope uncorrected' deviates from zero as a function of the oxygen consumption of the polarographic oxygen sensor and of oxygen diffusion into or out of the chamber. Observe stabilization of the signal in terms of flux approaching zero (MiPNet19.18E).

02b Background high O2   This layout is for recording a test for instrumental background oxygen flux in the high oxygen range from 150 to 450 µM.

03 Background Exp. corrected   This layout displays the background-corrected volume-specific oxygen flux, for quality control of the linearity of instrumental background correction. After an instrumental oxygen background test and determination of background parameters $a°$ and $b°$, Layout 03 displays 'O2 flux per V' (with background correction) instead of 'O2 slope uncorr.' (without background correction). Fluxes are now close to zero in the sections marked previously for determining the instrumental background parameters, providing a good control for the linearity of background flux as a function of oxygen concentration (MiPNet19.18E). This is equivalent to the display of residuals (MiPNet14.06).

04 Flux per Volume uncorrected   For each chamber 'O2 Concentration' and 'O2 Slope uncorrected' are displayed on the left and right Y-axis, respectively. 'O2 Slope uncorrected' is the negative slope of oxygen concentration (multiplied by 1000 to convert to units [pmol/ml]) over time [s]. No correction is applied for instrumental background oxygen flux, therefore the displayed slopes are not identical with oxygen consumption by the experimental sample. The scaling of the right Y-axis is set to display only positive total oxygen flux (from 0 to 100 $\text{pmol} \cdot \text{s}^{-1} \cdot \text{ml}^{-1}$; contrast the similar layout '02 Background Experiment').

05 Flux per Volume corrected   This layout displays background-corrected oxygen flux per volume, which is most relevant to evaluate experimental details, i.e. flux per volume is optimally in the range of 20 to 200-500 $\text{pmol} \cdot \text{s}^{-1} \cdot \text{ml}^{-1}$. This plot is also chosen when measurements on sample density are available only at a later stage (MiPNet19.18E). Total O_2 flux is corrected for instrumental background, $J°_{O2}$, to obtain sample oxygen flux per chamber volume, $J_{O2}(\text{sample})$:

$$J_{O2,V}(\text{sample}) = J_{O2,V}(\text{total}) - J°_{O2,V}$$

06 Specific flux per unit sample   Used for plotting background-corrected oxygen flux per unit sample. The unit depends on the choice made in the F3 window in the pull-down menu Sample Unit, and is calculated from the volume-specific flux. Example: Select mass with unit [mg]. Then mass-specific flux [$\text{pmol} \cdot \text{s}^{-1} \cdot \text{mg}^{-1}$] is obtained by dividing volume-specific flux [$\text{pmol} \cdot \text{s}^{-1} \cdot \text{ml}^{-1}$] by mass-concentration [mg/ml]:

$$J_{O2,mass} = J_{O2,V} / \text{Mass concentration}$$

07 Gr1-Flux Gr2-O2 Conc This provides an example of superimposing oxygen flux for both chambers in the top graph, and oxygen concentration in the bottom graph.

08 Specific flux muscle fibers This Layout is derived from "06 Specific Flux per Unit Sample", with the scaling adapted to the high oxygen concentration necessary for experiments with permeabilized fibers (200 to 500 μM; range 300 μM).

09 Flux control ratios Before selecting this layout, define the reference and baseline metabolic states in the menue "Plots\Flux Control Ratios". Plot of flux control ratios (*FCR*) for both chambers in a single graph (Graph 1). The range for the *Y* axes is set to 1.0. Oxygen concentration is plotted in Graph 2 for both chambers.

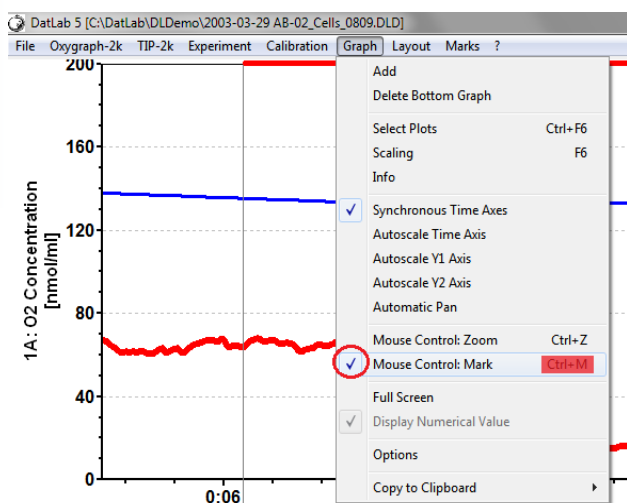**Z Trouble shooting** For critical evaluation of oxygen sensor performance.

» Layouts for O2k-MultiSensor applications are explained in the specific sections of the O2k-Manual.

Info Layouts are explained in specific chapters of the O2k-Manual or O2k-Protocols with links to O2k-Demofiles.

Manage layouts Layouts can be renamed or deleted.

8. Marks

Set Marks to obtain the average of the data within the mark, for calibration ([MiPNet19.18D](#)) and data analysis ([MiPNet19.18E](#)). Marks define a section (period of time) in a selected plot (column) and contain the data of the selected plot within the defined section of time. Marks are shown by a horizontal bar in the active plot. Several marks can be set on any plot, but marks cannot overlap and must be separated by one or more data points which are not marked.

L🖱 Mark In the Graph Menu select "Mouse Control: Mark", or press [Ctrl+M]. Select a plot on a graph, by clicking on the column label in the figure legend on the right side of the graph. The active column is highlighted. Set the cursor on the starting position of the mark, hold [Shift] and press the left mouse button [Shift+L🖱], while moving the cursor along the *X*-axis.

The period of a mark may be reduced or the entire mark deleted by holding [Shift] and pressing the right

mouse button [Shift+R⊖], while moving the cursor along the *X*-axis over the marked section.

Default mark names   Marks are labelled with consecutive numbers, starting from 01, independent of the sequence of position of the marks. When deleting a mark [Shift+R⊖], then this mark number is missing on the mark list. Marks >99 are named as 00. Extending the default mark names, e.g. from '03' to '03-TD', maintains the numerical sequence for default names in subsequently generated marks.

Edit mark information   L⊖ click into the top\bottom bar of the mark: **Name:** Enter the new name. Marks for calibration may be named R1 and R0, for air and zero calibration, respectively.   **Value:** Optional, entered values will be used as concentrations in the Amp calibration window. **Comment:** optional.

8.1. Statistics [F2]

One plot is selected as source for marks over time sections. Values (e.g. averages) are displayed for these time sections of the source plot and of further selectable plots.

1. Select chamber for which plots should be displayed.
2. Select the source plot on which the marks are set.
3a. Select channels whose plots should be displayed in the marks statistics table.
3b. Optionally further reduce the plots for which statistics should be displayed.
4. Select how the displayed values are calculated. Default: Averages over the sections defined by marks.

5. Select the sequence of marks, sorted according to a time sequence (Time) or in alphanumerical order (Mark name).

6. Values in all selected plots are displayed. The source plot for marks is indicated by an "X".

Any single data field of the table can be selected by a left mouse click, copied by Ctrl+C, and pasted into a Windows™ file\program by Ctrl+V.

Copy to clipboard: L⊕ Copy to Clipboard to copy the mark statistics table into an Excel or SigmaPlot file. It is important to carefully evaluate which set of data rows is relevant.

More details » [MiPNet19.18E O2 flux analysis](#).

8.2. Names and mange templates

Save mark names as template and **Rename** all marks of a plot after **Preview from template**. Rename and delete templates in **Manage templates**.

8.3. Copy marks from

Marks are copied from a selected plot to the active plot.

8.4. Show system channels in statistics

Select or deselect sytem channels (barometric pressure, block temperature etc.) to be shown in Statistics.

9. Some features of Windows™ and DatLab graph layouts

Print   The entire screen is 'printed' to clipboard.
Alt+Print   The active window is 'printed' to clipboard.
Ctrl+C   Copy to clipboard.
Ctrl+V   The contents of the clipboard is pasted into the page of a Windows™ program (Word; Excel; PowerPoint).

Updates » [www.bioblast.at/index.php/MiPNet19.18C_DatLab Guide](#)

» [www.bioblast.at/index.php/MiPNet19.18A_O2k-Start](#)

Next step – **O2k-Core Manual D** » [MiPNet19.18D O2k-Calibration](#)