

Otolith







Description:

The main purpose of this application is analyzing fish otoliths by looking at tree - ring like markings on the otoliths.

User Interface:

Otolith is a wizard like app. Each step includes help and all necessary tools. User cannot move to the next step if current step is not completed.

Step 1 - Image

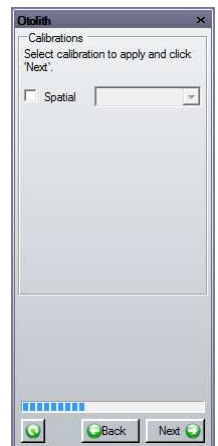
-  - open File Open dialog,
-  - load Otolith measurements from the file,
-  - open Options panel,
-  - move to the first step,
-  - move to the previous step,
-  - move to the next step.



Step 2 - Calibrations

If Spatial is checked then selected calibration will be applied to the image.

Last item in the calibration's list is "Edit Calibrations..." - selecting this item opens Spatial Calibration panel.




Step 3 - Transect Line

This step provides options and tools to add transect line to the image.


Free Hand - draw transect line from the focus to the edge of the otolith using Polyline tool (Polyline tool started automatically),

Longest Transect - draw transect line from the focus to the edge of the otolith using Line tool (Line tool started automatically),

Reference & Perpendicular - draw transect line as perpendicular to the reference line from the focus of the otolith.  - start Reference & Perpendicular routine.

Profile Width defines the width of the transect line in pixels.



 - open Local Zoom panel,

 - remove transect line from the image.



Step 4 - Major (Annuli) Marks

This step provides options and tools to add major marks.

Use a mouse to add or remove selected major marks on the image and  /  to remove major marks.


Navigation group provides controls for closer view along transect line.




Step 5 - Minor (Circuli) Marks

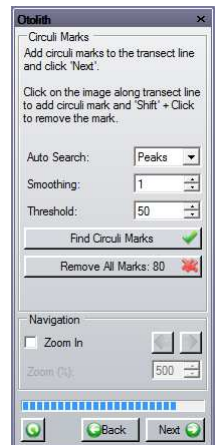
This step provides options and tools to automatically detect minor marks and manually correct the result.

Auto Search defines the edge type for auto search. Smoothing defines smoothing factor for the raw profile values. Threshold defines the threshold level for the edge.

 - automatically find selected minor marks,

 - remove all minor marks,


Navigation group provides controls for closer view along transect line.





Step 6 - Result


This step provides options and tools to save/export/share the results.


User ID, Age and Comment will be added to the Excel spreadsheet and text file (see Options for more details).


 - add new User ID,

 - add comment as annotation text to the image,

 - save measurements into file,

 - export data into Excel spreadsheet,

 - snap current view with current zoom and all measurements into new image,

 - save in 'One Click' saves measurements, data and image snapshot into files (see Options for more details).

 - creates new report for active image.



Options

Option page defines various parameters of the app.

Transect Line

Name & Color - name and color of the transect line on the image,

Transect Circle Color - color of the transect circle on the image.

Major Marks

Label - name of the major marks in the app and data table.

Measurements - type of the measurement displayed on the major ticks.

Major marks table - defines major marks and parameters:

Name	Prefix	Char. #	Verify	Comment	
Fresh Water	FW	5	<input checked="" type="checkbox"/>		✗
Fresh Water Plus	FW+	None	<input type="checkbox"/>	{PREFIX}-{GLNUMBER}	✗
Salt Water	SW	6	<input checked="" type="checkbox"/>		✗
Salt Water Plus	SW+	None	<input type="checkbox"/>		✗

- Name - name of the mark
- Prefix - prefix of the mark
- Color - color of the mark
- Char. # - defines the character number in the image name

Example:

The character at position 5 in the image name defines number of the Fresh Water marks.


The character at position 6 in the image name defines number of the Salt Water marks.

- Verify - if checked then the number of the marks (from the image name) should match the number of the marks on the image (added by user)
- Comment - defines the comment format (VB construct). If defined then the Comment field will be automatically populated using this format. Supported fields:
 - {NAME} - name of the mark
 - {PREFIX} - prefix of the mark
 - {INDEX} - index of the mark in the group
 - {GLINDEX} - index of the mark from the focus
 - {NUMBER} - {INDEX} + 1
 - {GLNUMBER} - {GLINDEX} + 1
 - {COUNT} - count of the marks in the group
 - {GLCOUNT} - count of all marks

Example:

{PREFIX}-{GLNUMBER} creates comment "FW+-3" (3 a number of the FW+ mark along transect line).

-  - remove the selected mark from the list.

 - add new mark to the list.

Age Format - defines the age format (VB construct). If defined then the Age field will be automatically populated using this format. Supported fields: Prefixes of the major marks.

Minor Marks

Label - name of the minor marks in the app and data table.

Name & Color - name and color of the minor marks on the image.

Export into Excel

This group defines the fields to export into Excel spreadsheet:

Title, Image Name, Date/Time, User ID, Age, Comment

Save in 'One Click'

This group defines data to save using Save in 'One Click' button:

Measurements - transect line, major and minor marks (.lps),

Image with Measurements - image with transect line, major and minor marks (.tif),

Image Snapshot - image snapshot with 100% zoom and all measurements (.jpg),

Results in Excel file - selected fields from Export group, major and minor marks tables (.xlsx),


Results in Text file - results in text format (.txt),

Output file - if checked then the measurements will be appended to the selected file,

Destination Folder - if checked then result files will be saved into selected folder,

File Name - defines the file name format (VB construct). Supported fields: {FileName}, {UserID} and {DateTime},

Date/Time - defines the date/time format used in the file name (VB construct: <http://msdn.microsoft.com/en-us/library/az4se3k1.aspx>). This field is available if File Name contains {DateTime}.

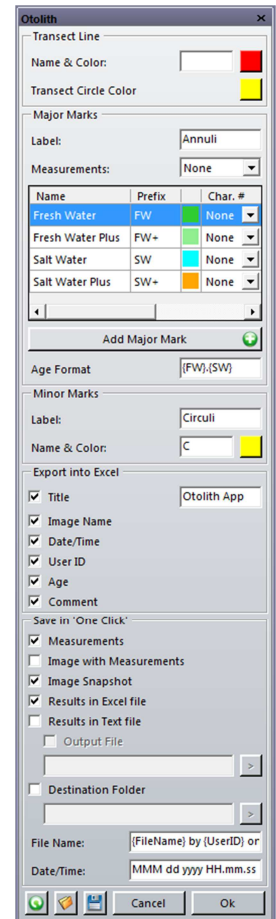
 - reset options to default,

 - load options from the file,

 - save options into the file,

Cancel - close options page without saving,

Ok - save changes and close options page.



Name	Prefix	Char. #
Fresh Water	FW	None
Fresh Water Plus	FW+	None
Salt Water	SW	None
Salt Water Plus	SW+	None

Example of the exported data:

Otolith App

Image Name: BT8903F001.TIF

Date/Time: Feb 12 2013 13:23

User ID: User ID

Age: 2.2

Comment: Comment

Annuli #:	Label:	Distance (px):	Space (px):
1	FW - 1	422.395	422.395
2	FW - 2	674.629	252.234
3	FW+ - 1	1002.652	328.023
4	SW - 1	1319.972	317.32
5	SW - 2	1664.583	344.611
Circuli #:	Annuli:	Distance (px):	Space (px):
1	FW - 1	146.116	146.116
2	FW - 1	342.656	196.54
3	FW - 2	634.962	292.306
4	FW+ - 1	855.704	220.742
5	SW - 1	1067.058	211.353
6	SW - 1	1230.632	163.575
7	SW - 2	1358.321	127.688
8	SW - 2	1487.678	129.358
9		1670.448	182.77

