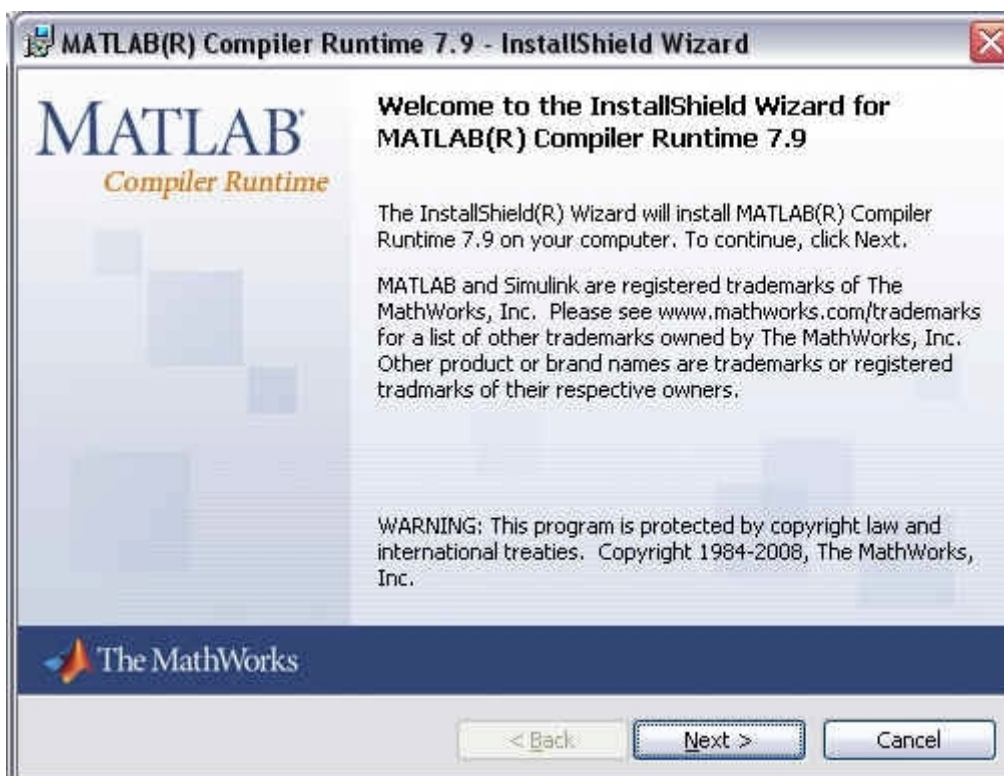# IStool

1.Introduction

Istool is Graphical User Interface and Matlab compiled software application. he software was developed for subtractive imaging in fluorescence confocal microscopy.. It works with several common image file formats (jpeg, png, bmp, tiff). Application performs image normalization, weight coeficient, and point spread function elimination. Weight coeficients are computed individually for each image pair. Program enables graphical user interface with basic functions as image view, zoom, and pan. Automatic export of the results is available. Optimal RAM size installed on computer is 1GB or higher.

2. Installation

a)   Install Matlab(R) Compiler Runtime 7.9 running MCRInstaller.exe.
which is available at http://sourceforge.net/projects/expertomica-eda/files/Matlab%28R%29%20Compiler%20Runtime%207.9/7.9%20Win32/MCRInstaller.exe/download

and follow the instructions.
Visual C++ 2005 Redistributable Package (it is included in the MCRInstaller) and .NET Framework might be required (not necessary for the IStool).
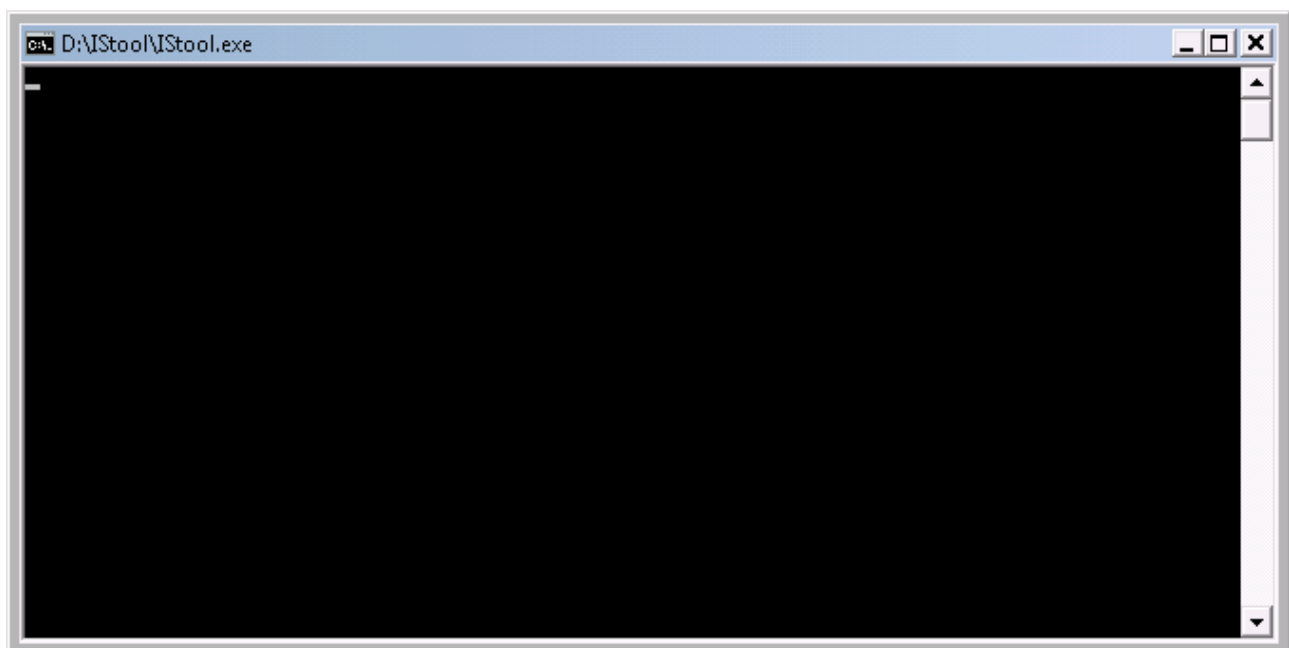Rebootof your computer might be required after the MCR instalation.

b)   Unpack the IStool files (available at http://www.auc.cz/software/) into your folder.
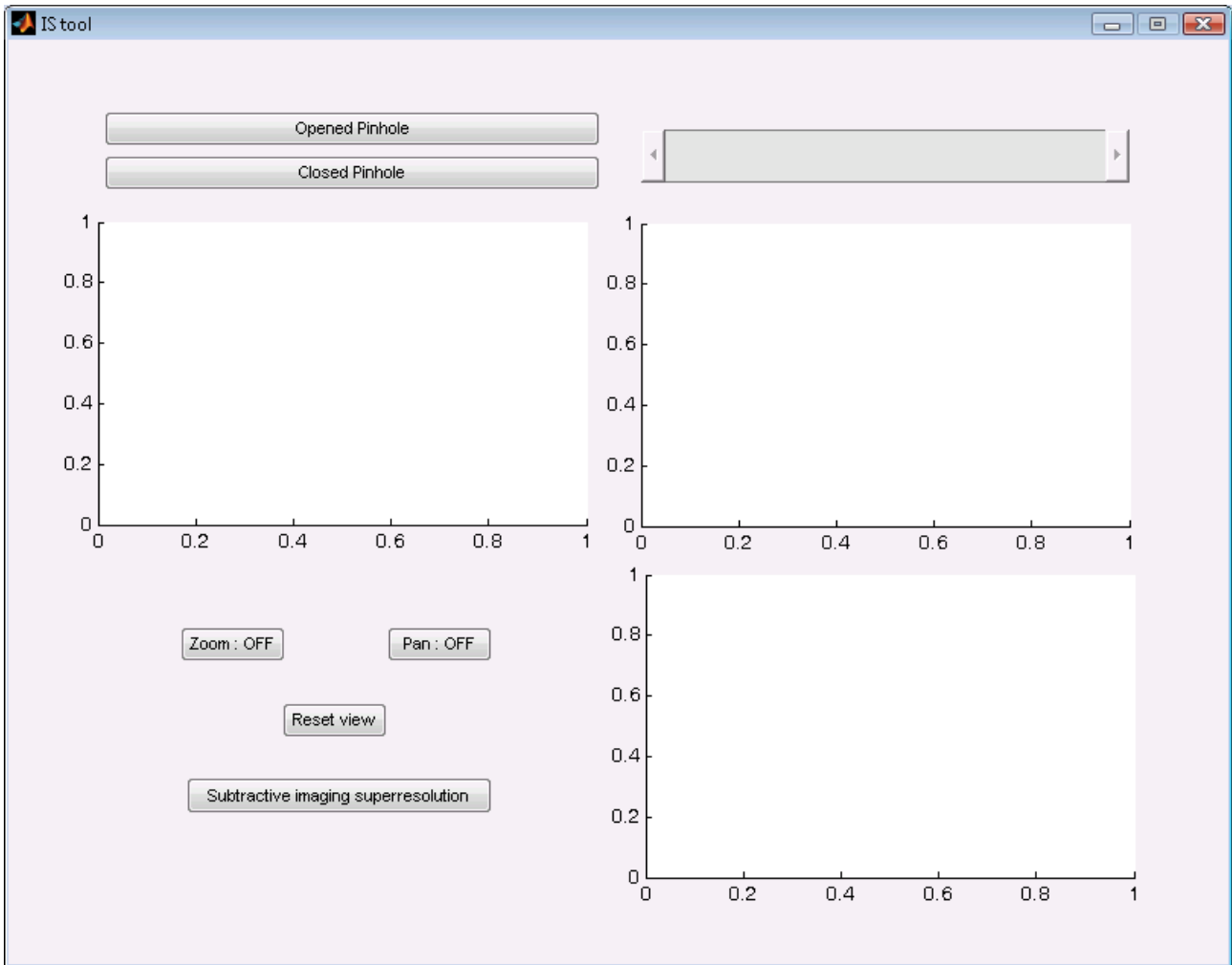
3. Start application

Run IStool.exe, You will see a command line window
(do not close - closing command line window will terminated also whole application!)
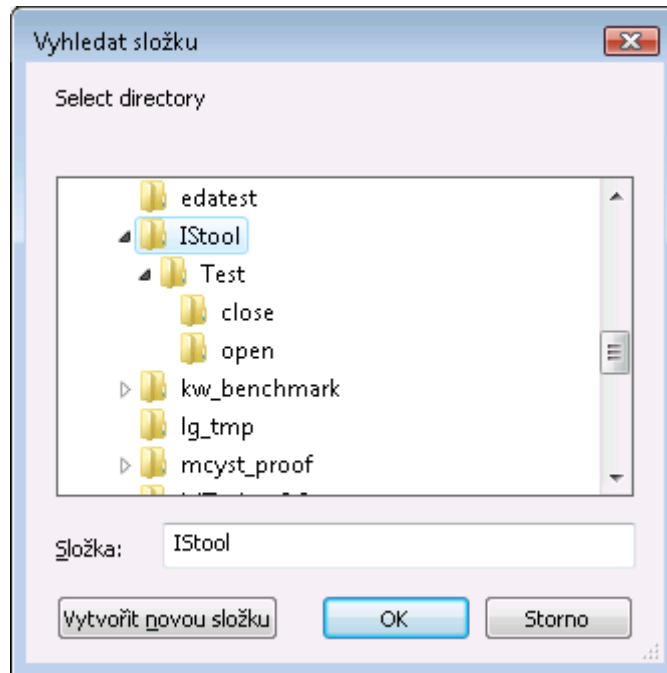

and main window of IStool.

4. Open 'open pinhole' image directory for processing

Click on the button under the label 'Opened Pinhole' on the top left corner of main IStool window.

You will see an explorer window which allows You to select the directory with Your images. Then press OK button.

Viopin will automatically load all images in the directory and shows the first one.

Supported image file formats are follows:
JPEG (*.jpg, *.jpeg, *.jpe, *.jp2);
Bitmap (*.bmp);
Portable Network Graphics (*.png);
TIFF (*.tiff, *.tif).

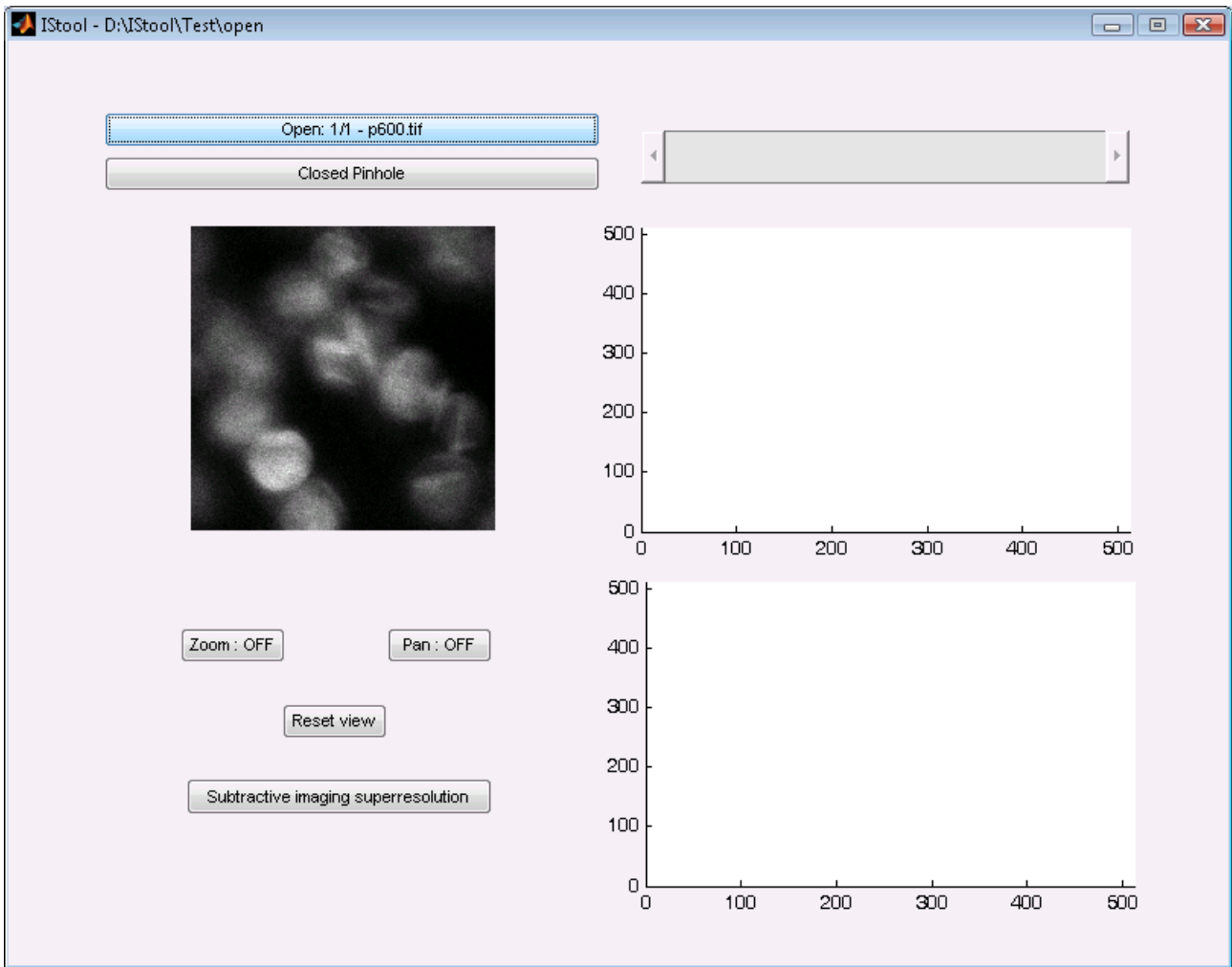# 5. Open 'closed pinhole' image directory for processing

Click on the button under the label 'Opened Pinhole' on the top left corner of main IStool window.

You will again see an explorer window which allows You to select the directory with Your images. Then press OK button.
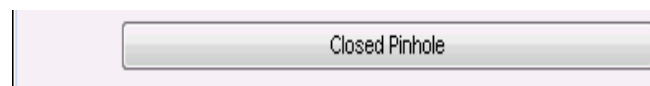

Viopin will automatically load all images in the directory and shows the first one.
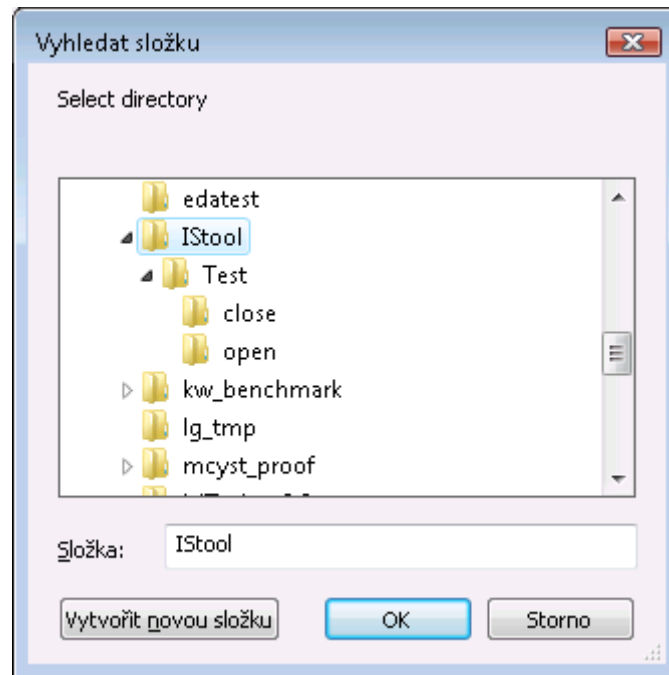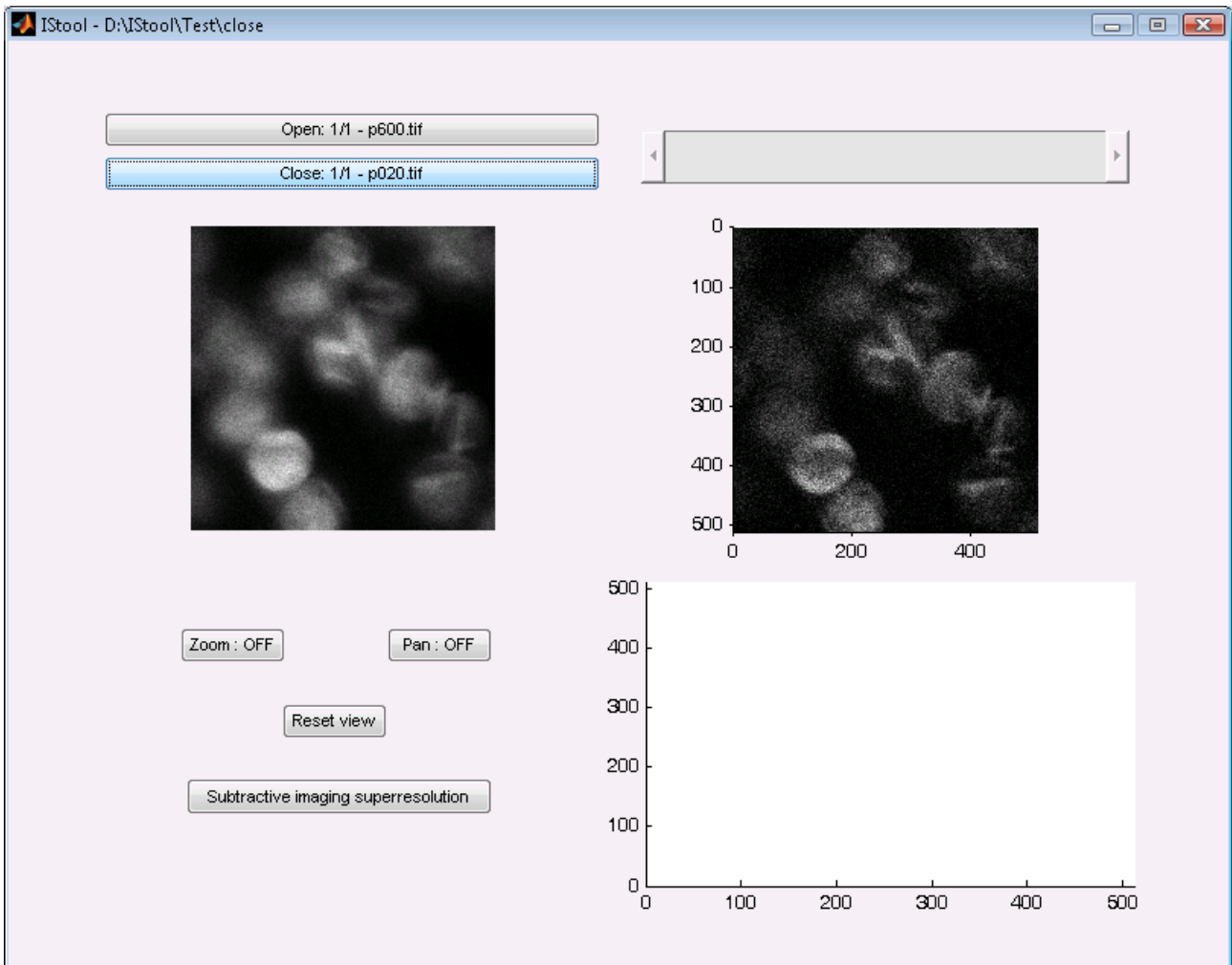
Supported image file formats are follows:

JPEG (*.jpg, *.jpeg, *.jpe, *.jp2);
Bitmap (*.bmp);
Portable Network Graphics (*.png);
TIFF (*.tiff, *.tif).

6. Tools

The Viopin offers several tools for image(s) view.

a) **Slider** is located on the top right corner and allows to go through the directory. On the Picked image(s) button are provided information of the image order in the directories, total amount of the images in the directory, and the name of current image. The current images is also displayed in the upper left plot of the three plots in the software interface.

b) **Zoom**: The first button in the tools 'Panel' allows to switch on/off zooming of the current image. The zooming is synchronized in all plots. Default value is off.

c) **Pan:** The second button in the tools 'Panel' allows to switch on/off panning for zoomed images. The panning is also synchronized in all plots. Default value is off.

d) **Reset view**: after zooming, or panning, or both, this button will reset default view settings

e) **Subtractive imaging superresolution**: Main function of the software provides the subtractive imaging of the files in the directories. The results are then shown in remaining figure.
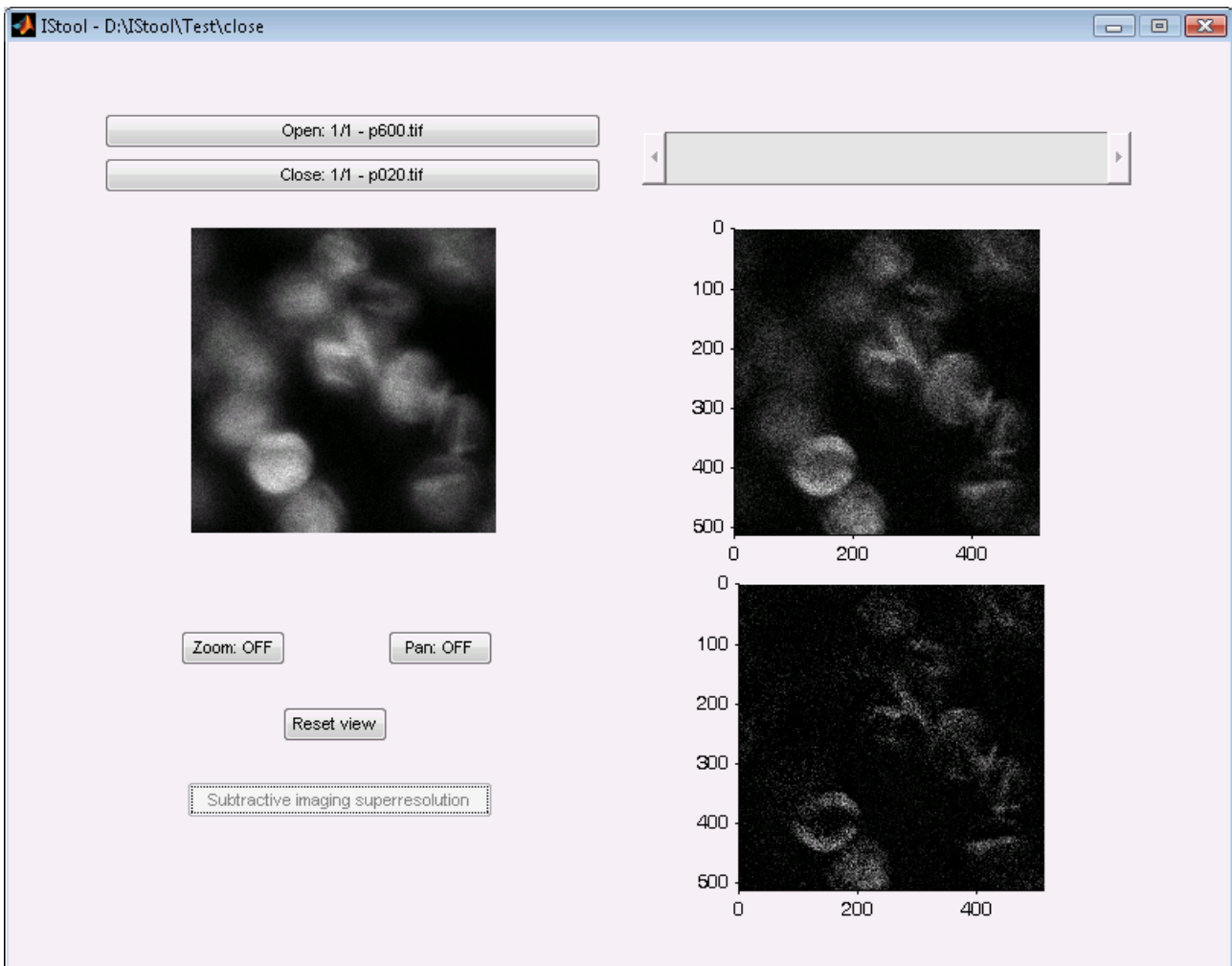
6. Results

The comuted image is stored into the close pinhole directory
The software creates two output subdirectories labeled 'cells' and 'noise', where are stored images resulted from the subtractive imaging. In the 'cells' subdirectory are results of superresolutin, while in the nosie directory are the images of removed point spread function

The function of slide, zoom, pan, and reset remains unaffected.

For further information visit http://www.frov.jcu.cz/en/sks-frov-ju/skola-komkplexnich-systemu

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