temDM ClickMover

Installation: The plugins temDM ClickMover.gtk" and „temDM ExtFrames.gt3" should be placed in some plugins folder of DigitalMicrograph.

The script „find plugins folders.s" included in the distribution package will help you to localize such folders. Open „find plugins folders.s" in DigitalMicrograpgh and run it by pressing „execute" or by pressing ENTER with holding the CNTR key. Read the list of available plugins folders. The first folder in the list is most appropriated for placing the temDM plugins.

Some folders can be hidden in Windows. If you do not see all folders, make them visible in Windows explorer:

Windows 7:   „Organize" tab – „Folders and search options" – „View" tab – click „show hidden files, folders and drivers" checkbox.

Window 10:   „View" tab – click „hidden items" checkbox.

Drop the plugins into the choosen Plugins folder.
Restart DigitalMicrograph.

To update the version, just overwrite the plugin of the previous version in the Plugins folder. This is needed to avoid confusion of DigitalMicrograph with loading ambiguous commands.

Alternatively, you can install the script manually in DigitalMicrograph.
Having "extended frames classes.s" frontmost click: "File" – "Install script"- "Library"-"OK"
Having "Rotation112.s" frontmost click: "File" – "Install script"- "Library"-"OK"
Having "ClickMover mapEM.s" frontmost click: "File" – "Install script"- "Library"-"OK"
Having "ClickMoverg.s" frontmost click: "File" – "Install script"- "Menu command"-"OK"
In this way, you can modify the text of the script.

This plugin is primarely aimed for an in-line DigitalMicrograph directly connected with a TEM microscope. However, it is fully functional in an off-line DigitalMicrograph where the plugin „temDM VirtualTEM.gtk " is installed.

Short description

First, assign the View window to the ClickMover. The LIVE View window should be frontmost

deassign View window

Chose how you wish to shift the field of view: by stage or electronically

reset the shift accumulated by ClickMover actions

gives access to the settings :
Calibration of the image and beam shifts for the given microscope
At least stage shift or image shift must be calibrated before the first use !

How it works:

Make a live image using a "Search" tool of DigitalMicrograph

Open the ClickMover tool by choosing menu item "temDM - ClickMover".

Choose how you want to move the field of view: by stage or by electronic image shift. In low-end microscopes, the image shift is preferable because it does not induce a drift. In high-end microscopes, the image shift might distort the tiny alignment, thus, the mechanical move with the stage is recommended.

Having the live image in front click "assign" in the ClickMover tool. The name of live image will appear in the text field.


Double-click at the feature of interest in the live image. The feature will be moved to the center of the live image. That's basically it.
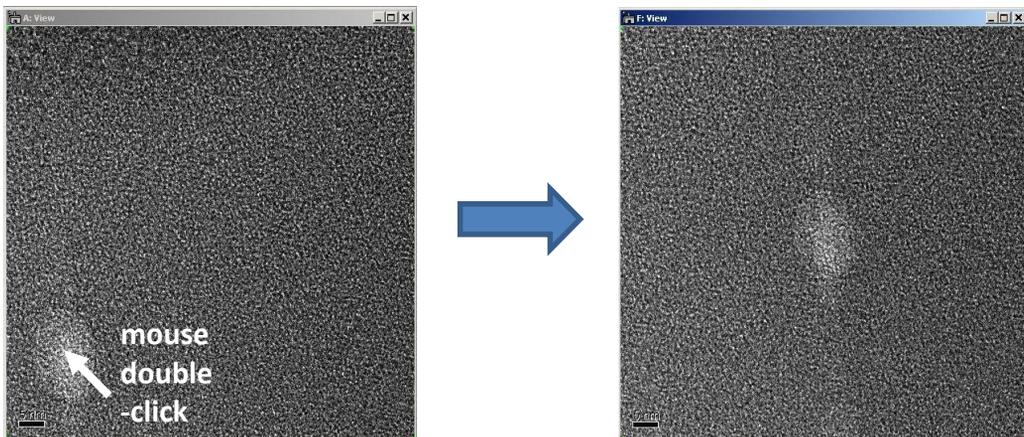
You can anytime reset all induced shifts by pressing "reset". Then the shifts (stage shifts or electronic shifts) are reset to their status when you assigned the image. If you "de-assign" the image, the reset is done automatically.

Before you first time use the ClickMover,
the shifts should be calibrated !!

Press icon 🔧. This gives you access to settings. Suppose that you wish to calibrate the image shift. Press image shift "calibrate". This procedure must calibrate the X, Y scales of the stage shift as well as the rotation between **"image"** and **"image shift"** coordinate systems.
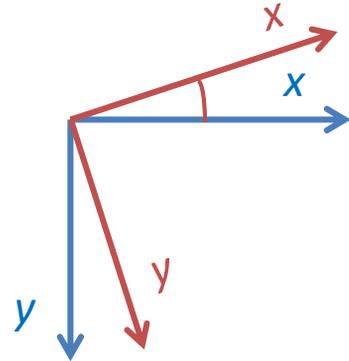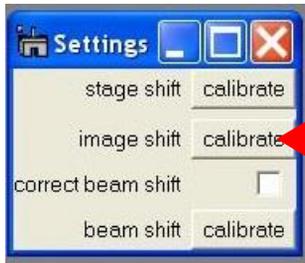

The calibration frame appears.

Find the recognizable feature in your live image. Click the knob "set". The whole image will be shifted at the value specified in the corresponding field. This value should be optimized. The shift should be not too high (you have still keep track of it) but not too small (otherwise the calibration would be inaccurate). The best shift is approximately the half of the field of view. Click several times "set" and "reset" to find the best shift value.


applied image shift
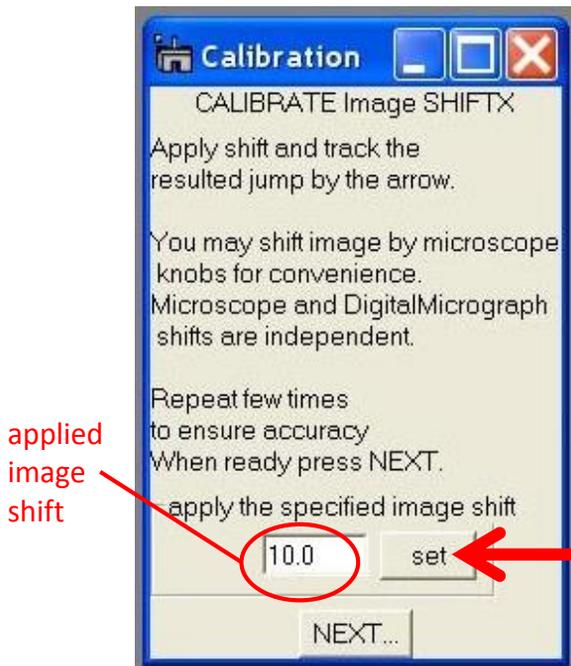
This knob turns to "set" or "reset" depending on whether the shift is already applied or not.

You notice that there is a calibration arrow in the live image. Before the shift applied, put the beginning of this arrow at your recognizable feature. After the shift applied, put the end of the arrow again at your recognizable feature. Repeat "set", "reset" several times to ensure accuracy.
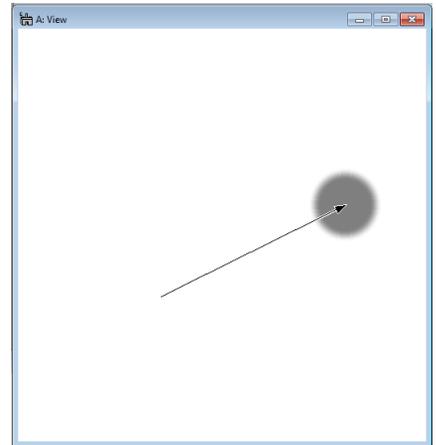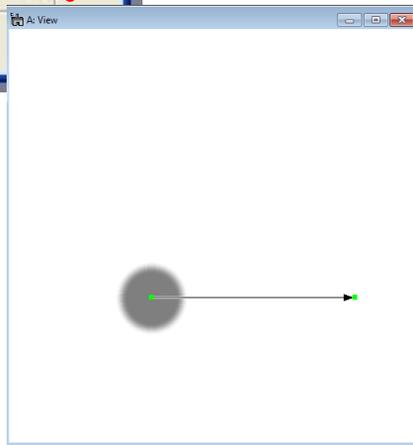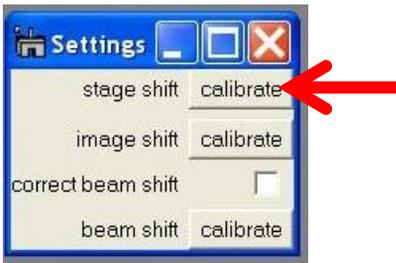

Press "NEXT" and calibrate the Y- shift in the same way.
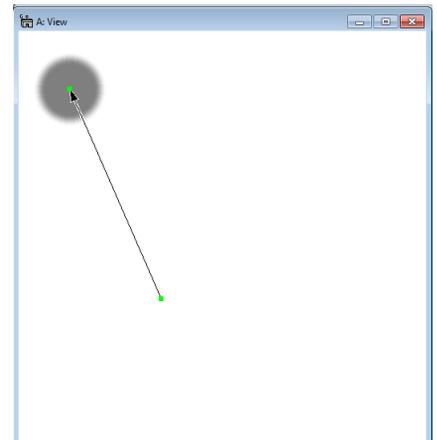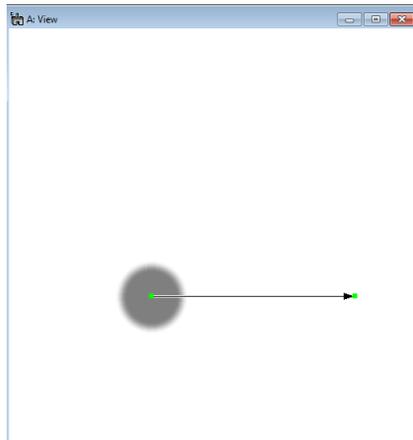
After you press "NEXT" the second time, the calibration is stored.

**If you want to shift mechanically with stage, do the same calibration for the stage shift.**

Usually the electronic image shift is coupled with shifting the beam, thus the beam shift might be corrected as well.
Click the checkbox "correct beam shift".

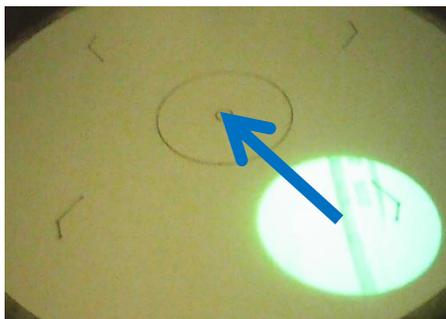**Before you use correction of the beam you should calibrate the beam shift.**
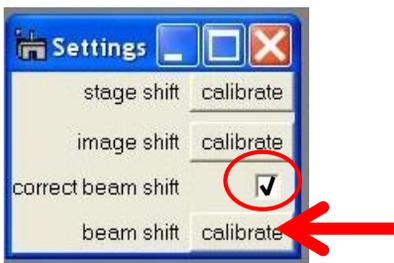
In this procedure you calibrate how much beam shift is induced by a given image shift. Also the rotation between the **"image shift"** and **"beam shift"** coordinates is measured and stored.
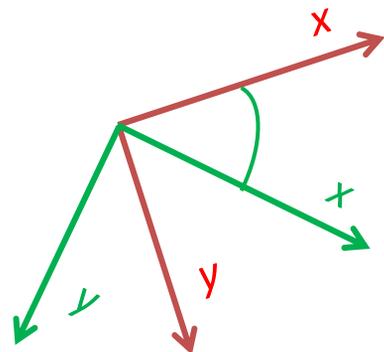
**Beam shift is calibrated slightly differently from the stage and image shifts.
It is performed by applying a large image shift and measuring the induced beam shift.
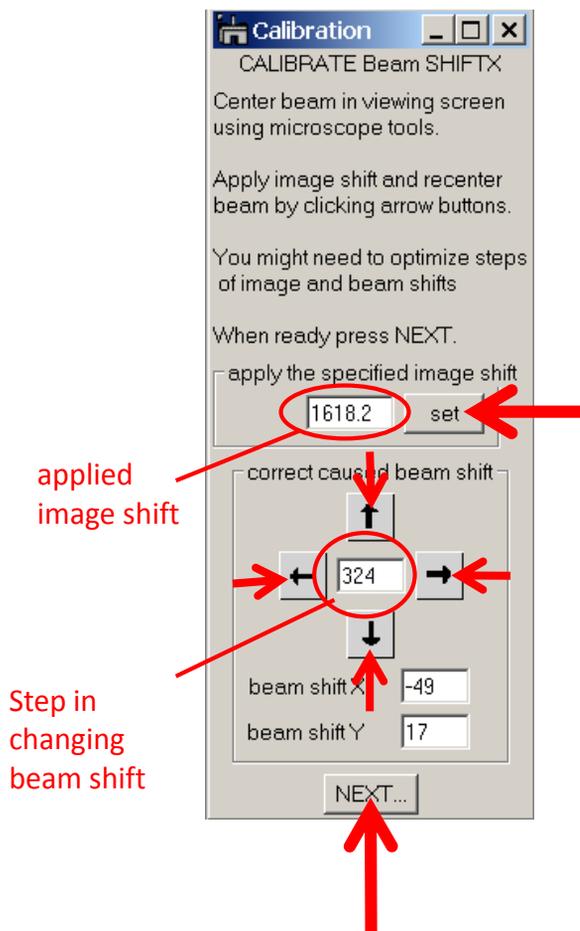Such coupling is visible at low magnifications only.**
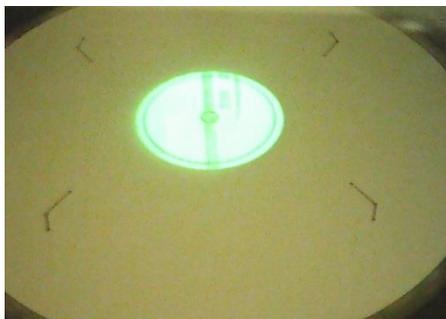
Look at your beam at low magnification.
Center the beam at the flu screen.

applied image shift

Step in changing beam shift

Calibration — CALIBRATE Beam SHIFTX

Center beam in viewing screen using microscope tools.

Apply image shift and recenter beam by clicking arrow buttons.

You might need to optimize steps of image and beam shifts

When ready press NEXT.

apply the specified image shift
1618.2   set

correct caused beam shift
324

beam shift X   -49
beam shift Y   17

NEXT...

Apply X image shift.
Track how the beam is shifted due to coupling. Recenter the beam by arrows. The step in shifting the beam can be tuned.

Press "NEXT" and do the same for the Y image shift. Pressing "NEXT" the second time will store the calibration.