Scale-Tools Manual

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1 General

1.1 Navigation

Keyboard:

- use keys WASD

Mouse:

- drag with left button to change view direction
- drag forward/back with right button to move forward/back
- middle button to pan

1.2 Main GUI

Select App Tab:

- choose the active tool
- show/hide the orientation cube

App Control Tab: displays the GUI for the active tool.
Press Key-0 (zero) to toggle between texture or flat-shading for the terrain.

2 Boxes

Show/Hide the global bounding box by clicking the button. Add Boxes:

- in the General-Tab click on Mouse or PCA to add boxes.
- Mouse: click the Mouse-Button, then double-click on the terrain to place a unit-box at that position.

- PCA: click the PCA-Button, double-click on the terrain to select points (the box will be fitted to the selected points). Select a minimum of three points and click the Finish-Button (or press Enter) to add the box.

Manipulate Boxes:

- double-click on a box to select/unselect it.

- click the Delete-Button or press Del to remove the selected box.

- open the Box-Tab for details.

- in the Box/Values-Tab name the selected box, set the dimensions and choose the trafocontroller.

- in the Box/Edit-Tab click the Move-Button, then double-click on the terrain to move the selected box to that position.

- click the Edit Faces Button to adjust the dimensions of the selected box. Choose the face in the GUI (1-6) or double-click on the face you want to edit. Drag the trafocontroller to move the selected face.

Render-Options:

- open the Box/Rendering-Tab to select render-options.

- choose between solid and wirebox rendering.

- turn transparency on/off (Blending).

- click Hide/Show-Trafocontrols to hide/display the trafocontrols for the selected box.

Save/Load Scenes:

- in the General-Tab, click on Load to load a previously saved scene (.bxs fileformat).

- click the New-Button to create an empty scene.

- enter the name of the scene into the Scene-Name-Textbox.

- save the scene by clicking the Save-Button. Scenes are saved to .\boxscenes\scenename.bxs (if no scenename is provided, the scene will not be saved).

Keyboard-Shortcuts:

- Key M to move the selected box.
- Key E to enter/exit Face-Edit mode.
- in Face-Edit mode: keys 1,2,3,4,5,6 to select the face.
- Key B to toggle transparency.
- Key P to toggle solid/wirebox drawing.
- Key Del to remove the selected box.

3 Scale Bars

- click the Add-Button, then double-click on the terrain to place a new scale-bar.
- double-click on a scale-bar to select/unselect it.
- click the Remove-Button or press Del to delete the selected scale-bar.
- double-click on the terrain to move the selected scale-bar to that position.
- set the height of the selected scale-bar with the Height-Numberbox.
- switch between vertical/horizontal alignment
- click the Stepped-Button to display a scale-bar with adaptive height, dependeing on the distance to the camera.

4 Shading

This tool displays the distance from a selected point.

- double-click on the terrain to select the current point.
- switch between continuous and discrete shading.
- set the radius in meters, the number of discrete steps and the alpha-blending values.
- draw an additional scale-bar in the center.

5 Contour Lines

Increment numberbox: adjust the distance between the contour lines in meters. Offset numberbox: controls the offset of all contour lines (in meters).

6   Known Objects

- to add objects click the Add-Button, choose the model from the Known-Object-Type-Dropdown and then double-click on the desired position in the scene to place the object.

- the selected object is highlighted in green. double-click on an object to select/unselect it.

- when an object is selected, double click on a position on the terrain to move the object to that position.

- use the Remove-Button to delete the selected object.

- click the Show/Hide-Trafocontrols-Button to display the Trafocontrols for the selected object. Choose between Rotate and Translate controllers.

7   Vertical Exaggeration

Use the slider or the numberbox to control the amount of vertical exaggeration.

8   Plane Extrusion

1. click the Add-Button to add a new Planes-Stack.

2. double-click on the terrain to select points (minimum of three points).

3. the first two points define the width of the plane.

4. select additional points to fit the plane, for best results select a third point in the middle between points one and two, slightly offset up or down (see figure).

5. press Enter to fit the first plane.

6. double-click on a plane to select/unselect it.

7. remove the selected plane by pressing Del.

8. drag the trafocontroller to translate the plane along the normal.

9. press Space to add another plane to the selected stack. drag the trafocontroller to extrude the plane along the normal.
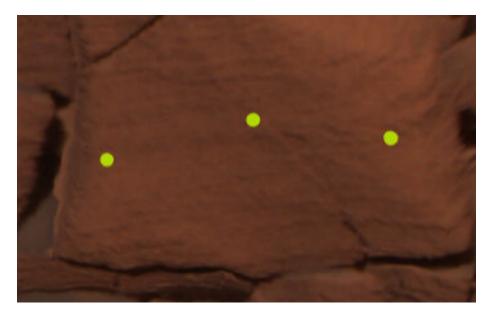
Figure 1: Selecting Points for Plane-Extrusion. First select the left and the right points (defines the width of the plane), then select a point in the middle, slightly offset up/down.

9 Ellipse Shading

An ellipsoid intersects the terrain, drawing an ellipse. The labels on the axes display the length in meters.

- double-click on the terrain to move the ellipse to that position.

- set the values for the center of the ellipse.

- set the dimensions of the ellipse (x,y) in meters.

- choose a color for the ellipse.

- show/hide the debug-ellipsoid (the ellipsoid intersecting the terrain to draw the ellipse).

Adjust-Button:

1. click the Adjust-Button

2. select three points by double-clicking on the terrain.

3. the first two points define the main axis of the ellipse, the third point defines the second axis (distance from main axis).