

## Views functionality

fr\_FR.png [...version française de cette page](#)

## 3D Views

You can add a **new 3D view** by clicking on the button  in the main toolbar.

## Navigating in view

The **3D view** is the most used in ComputreeGUI, because it allows to view items created by the steps in three dimensions. It uses OpenGL, valuing the graphical component **QGLViewer** (<http://www.libqglviewer.com/>). 3D navigation is as follows:

- Moving mouse while holding left button translates the view to the left, right, up or down
- Moving mouse while holding right button rotates the view relative to its center: by default (0,0,0)
- The **wheel** is used to zoom or unzoom

All other options provided QGLViewer by are also available: type “h” after clicking on the view to get the list of possibilities.

## Toolbar

The toolbar provides access to additional features.



Button  allows to manage views (camera settings). [Details on views](#)[Details on views](#)

By clicking on the views button, the following menu is obtained:

points de vue.png

It contains:

- At the top of this menu is grayed out the **name of the current file views** ( DEFAULT in general case)
- Then **include the list of available points of view** (previously recorded). One click sets the view to the corresponding point of view.
- **Add**: Creates a new point of view by saving the current camera settings. Then a dialog opens to choose the name.
- **New**: Resets the system views (without saving DEFAULT)
- **Delete all**: delete all recorded points of view
- **Open file**: loads in memory previously saved file of points of view

Loading a “points of view” file erases the currently available points of view.

- **Save As:** Saves the current points of view in a file.

In fact there is always a file containing the available points of view. When installing Computreethis file is DEFAULT. If the user do Save as, the the saved file becomes active and retain the points of view created from this moment. If user do Open file, then the loaded file becomes active, and will become the storage location of the new points of view created after.

Button  provides access to Exporters for selected items. This functionality is described in the [Using Exporters](#).

Button  allows you to set preferences for the view. [Details preferences for view](#)[Details preferences for view](#)

By clicking this button, a dedicated dialog box opens:

options\_graphiques.png

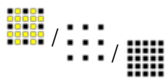

- Part **colors and sizes** allows to choose the background color, the selection color and drawing size of points
  - **Display axes**: displays the axis (X, Y, Z) at the center of the view
  - **Use reflectance information**: displays the points with a brightness proportional to their intensity value. Else they are all displayed in the same color (typically white)
  - **Enable transparency**: displays the geometric shapes with transparency
  - the **Optimization** section presents three alternatives
    - **Always use optimization**: reduction of points number all the time
    - **Use optimization only when traveling**: reduction of points number during moves, all points are drawn after the time set in redraw after...
    - **Never use optimization**: always draw all points ever when moving
  - **Camera section** gives the camera the ability to display the coordinates (center of the view, position of the camera, camera direction) in a corner of the view
  - Button **default** saves the current settings as default for future sessions.
- 




Button  can apply a color to points / faces / half-edges attributes. [Details on coloring attributes](#)


By clicking this button, the following dialog box is obtained:


gradient\_dialog.png

- The left column lists the attributes available in all steps for each category of data that can be colored in this way
    - **Points**
    - **Faces**
    - **Half-edges** (edge)
  - The second column is used, using buttons, for **mapping colors gradient** to elements, considering attribute values
  - The third column allows to use the shared gradient
  - The fourth column provides access to a configuration windows for MIN and MAX values used for the attribute (it is interesting for overcoming outliers)
  - The lower part allows to choose the gradient used. You can add as many colors as needed.
  - The check-boxes at the bottom, allows to **directly use the color / normal attributes** in place of the displayed gradient.
- 



The buttons suite  allows to manage graphic optimization (as in the dialog obtained by button ):


-  : reduction of points number during moves
-  : reduction of points number all the time
-  : always draw all points ever when moving

The buttons suite  allows to manage points size (1 / 2 / 3 pixels).


Button  launch the computing of an octree. This acceleration structure allows quicker selections (particularly for points selection).


The creation of octree has to been redone when the content of the view changes. It could take a lot of time for big scenes.


Button  opens a menu with following icons: . Each icon defines camera orientation according to the selected point of view.


Button  adjusts the extends of view to the bounding box of the displayed items. This allows also to define the extension of the

area displayed by the camera. It recalculates the front and back clipping planes (nothing is drawn forward / beyond these planes). This button works only with items, for which bounding box is correctly set (this is always the case with items containing points).

Button  set the center of rotation for the camera on the center of the selected item / points.

Button  set the center of rotation of the camera on the center of the bounding box of all displayed items.

Button  set the center of rotation of the camera to (0,0,0)

Button  allows to manually adjust all camera settings. [Details on camera setting](#)[Details on camera setting](#)

By clicking the button, the following menu is obtained:

camera\_param.png

The following parameters can be modified:

- (x, y, z): position of the camera
- (xc, yc, zc): center of the view
- (rx, ry, rz ): viewing direction of the camera (between 0 and 1)

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## Synchronization of 3D views

It is possible to synchronize cameras of multiple 3D views: so when you change one view, the other views adjust to be synchronized from the same point of view.

You just have to activate the button **Sync** of the toolbar of each view you want to synchronize. The button is then modified in **Sync**.

There is only one stream synchronization between 3D views, even if you can add as many views as you want to this stream.

## 2D views

You can add a **new** 2D view by clicking the button  in the main toolbar.

A **2D view** works just like a 3D view, but the camera is locked on a point of view from the top.

Moreover the projection is \*orthoscopic \*, removing any perspective effect.

## Tabular views

You can add a new tabular view by clicking the button  in the main toolbar.

## General functioning

A **tabular view** displays attribute information of the items it contains. Items of different classes can be added to the same table view.

Each line displays the data of an item with a column for each field.

In all cases the column 1 contains the unique identifier of the item, and column 2 the name of its class.

Document 2 (ItemModel)				
Sync with..		Bouton de synchronisation		
1	2	3	4	5
2109	CT_PointCluster	XC:6.42334	YC:0.692646	ZC:-1.87186
2199	CT_PointCluster	XC:5.7696	YC:3.04191	ZC:-1.51423
Données				

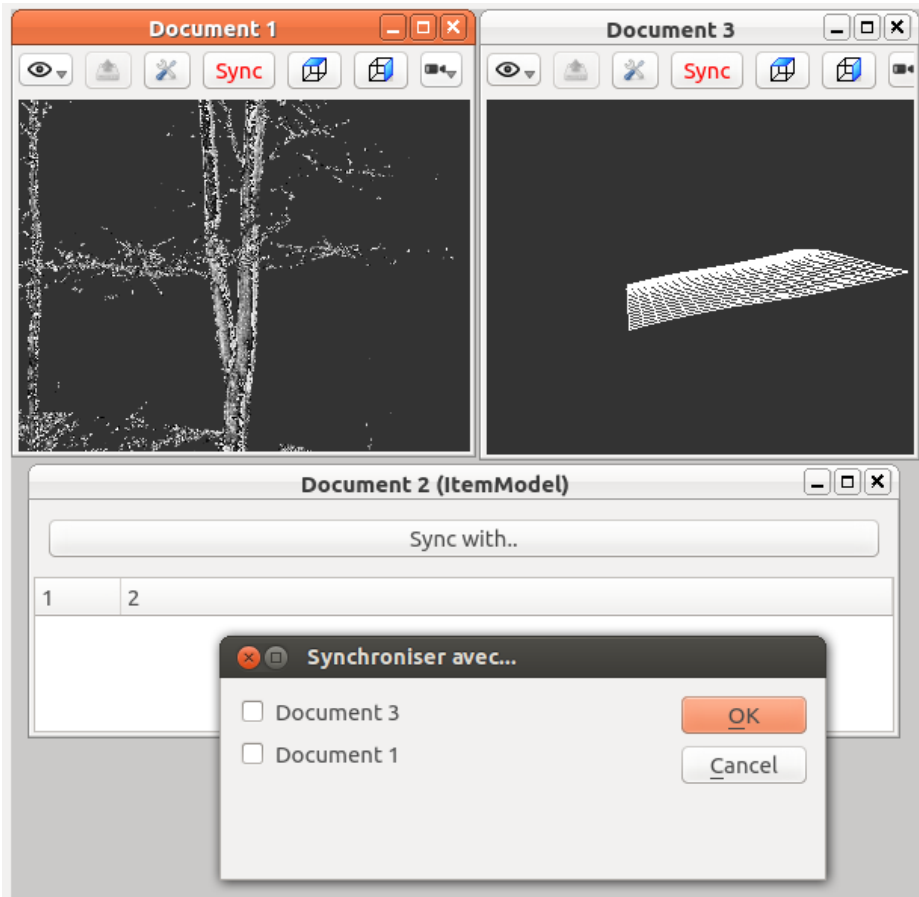
In the general case we add items to a table view in the same way as a 3D view:

- Using **Model Manager**
- Using **Items Manager**

## Synchronization

A **table view** can also operate in synchronization mode. In this case it synchronizes the table view with one or several 3D views #[] [] (other). Then any item selected in one view is also automatically added to the table view (if an item is deselected it is removed from the table view also).

To synchronize views with the table view, you must click on the button... **Sync with** , and then check the views that you want to synchronize.



## General Features

It is possible to delete the contents of all views by clicking the button 🗑️.

**View menu** is used to rearrange views in the **view area**:

- Cascade
- Tile

<a href="#">Previous (Displaying items)</a>	<a href="#">Back to GUI summary</a>	<a href="#">Next (Use Actions)</a>
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Files			
broom.png	1.97 KB	05/07/2014	Piboule Alexandre
camera.png	742 Bytes	05/07/2014	Piboule Alexandre
camera_param.png	21.4 KB	05/07/2014	Piboule Alexandre
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gradient_dialog.png	17.7 KB	05/07/2014	Piboule Alexandre

new-document.png	1.74 KB	05/07/2014	Piboule Alexandre
new-document-2d.png	2.66 KB	05/07/2014	Piboule Alexandre
new-document-treeview.png	2.14 KB	05/07/2014	Piboule Alexandre
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toolbar_3dview.png	6.21 KB	05/07/2014	Piboule Alexandre
tabularView_legend.png	57.4 KB	05/07/2014	Piboule Alexandre
top.png	480 Bytes	05/07/2014	Piboule Alexandre
upload.png	9.92 KB	05/07/2014	Piboule Alexandre
back.png	446 Bytes	10/26/2014	Piboule Alexandre
bottom.png	481 Bytes	10/26/2014	Piboule Alexandre
center_on_0.png	218 Bytes	10/26/2014	Piboule Alexandre
center_on_scene.png	314 Bytes	10/26/2014	Piboule Alexandre
center_on_cell.png	299 Bytes	10/26/2014	Piboule Alexandre
fast_never.png	143 Bytes	10/26/2014	Piboule Alexandre
fast_always.png	144 Bytes	10/26/2014	Piboule Alexandre
fitBB.png	285 Bytes	10/26/2014	Piboule Alexandre
fast_onmove.png	160 Bytes	10/26/2014	Piboule Alexandre
front.png	1.38 KB	10/26/2014	Piboule Alexandre
view3D_toolbar.jpg	10.5 KB	10/26/2014	Piboule Alexandre
view3D_sides.jpg	1.04 KB	10/26/2014	Piboule Alexandre
px_1.png	138 Bytes	10/26/2014	Piboule Alexandre
px_2.png	145 Bytes	10/26/2014	Piboule Alexandre
px_3.png	150 Bytes	10/26/2014	Piboule Alexandre
octree.png	1.35 KB	10/26/2014	Piboule Alexandre
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