

Alias|Wavefront Paris

CLASS ON PAINT EFFECT

(text)

IMAGINA 2000

(Duration 90 minutes)

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INTRODUCTION :

Some definitions :

With Paint effect you can paint on surfaces or in space. The brushes which you use are aerographes, effects of matters or trees, flowers or hair...

A stroke of pencil, or a blow of brush (**STROKE**) will be in MAYA space a collection of curves NURBS. (We will deposit seeds in a furrow...)

A collection of attributes is applied to each brushes(**TEMPLATE BRUSH**)

These brushes can be saved and thus become **PRESET BRUSHES**

Our objective during this class :

We will introduce the principal possibilities of creation of brush as well as even principal tools for animations of plants.

[First we will see connexions of Paint effect.](#)

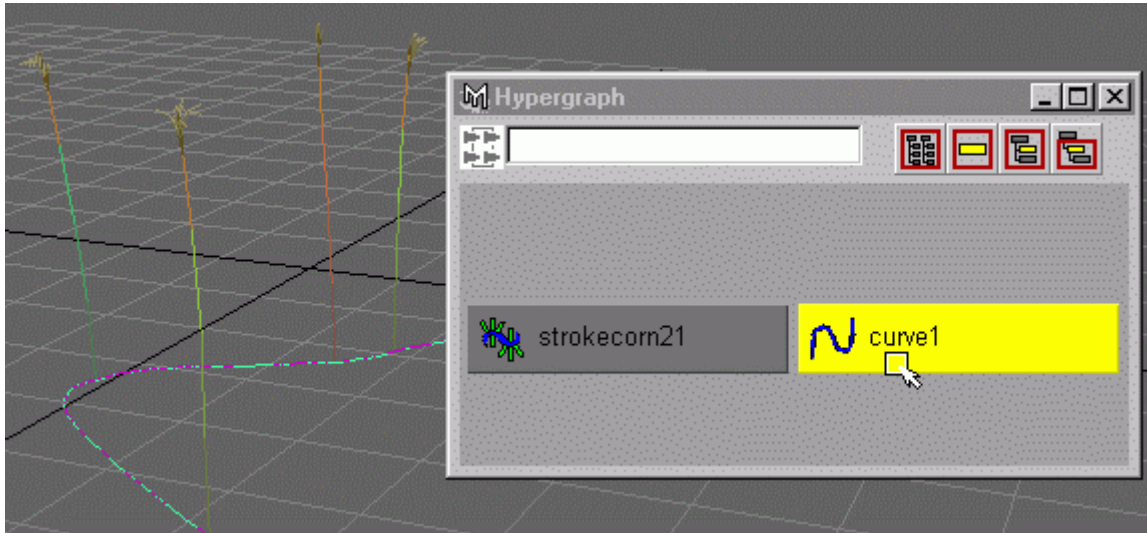
[Comment PFX est une Palette 2D.](#)

[Comment travailler dans l'espace 3D : planter des arbres des fleurs dans un paysage.](#)

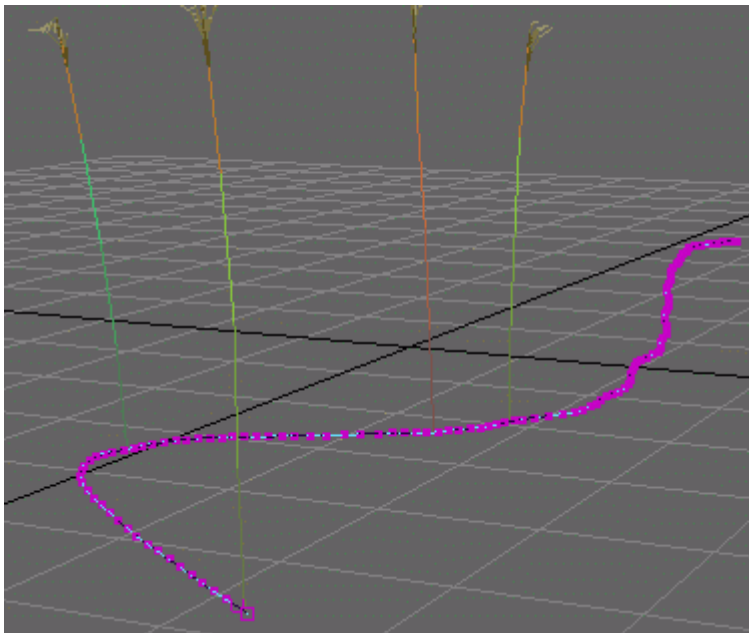
[Comment animer les éléments.](#)

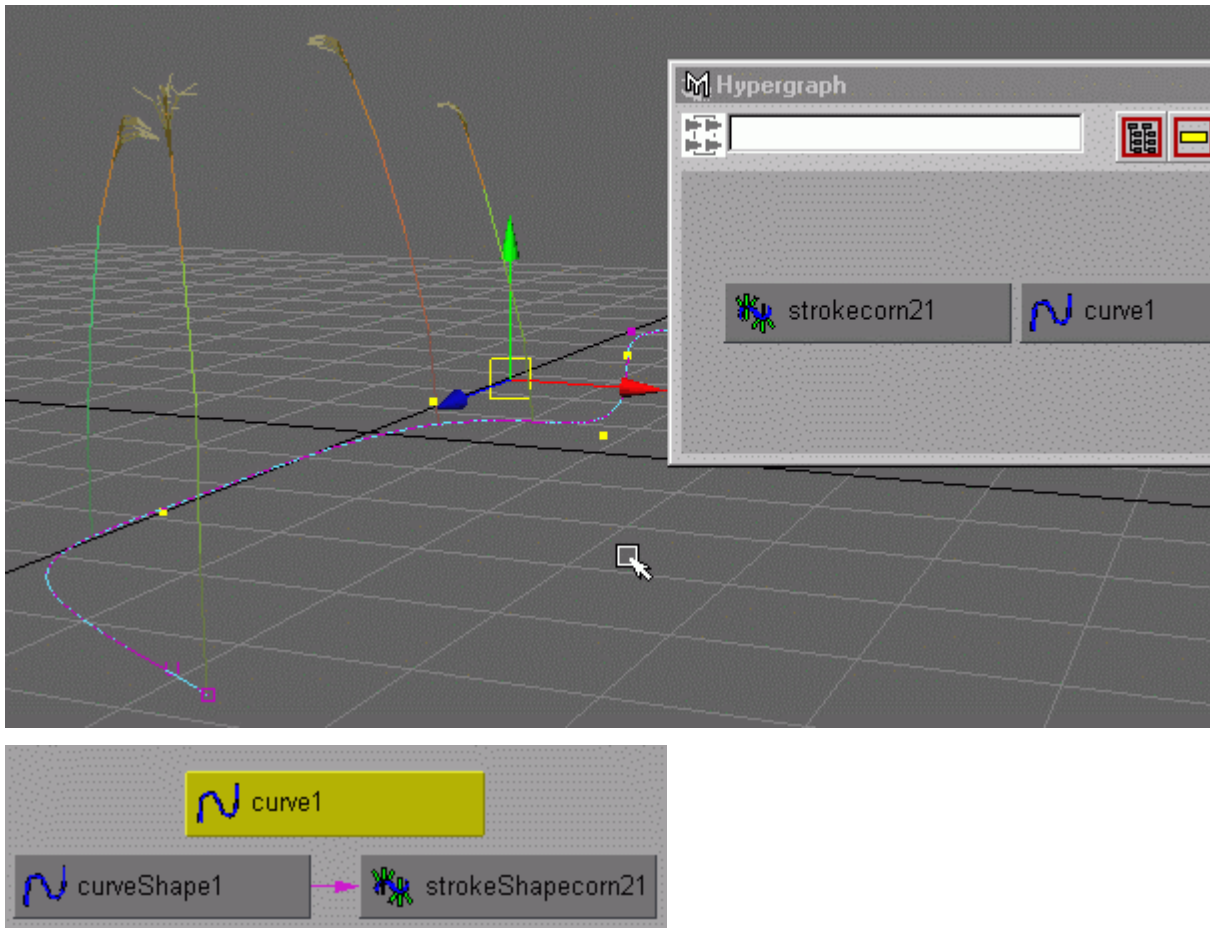
ATTRIBUTS CONNEXIONS :

By default " STROKES " are invisible Nurbs curves.



- **Visor-> Grasses->Corn2.mel**
- Draw in **Perspectiv view**
- **Open Hypergraph.** Click on the curve with the right key of mouse to chose in the Pop Up Menu l'option **Show**. The curve is visible.
- Show curve **CV's**, (Click just near the curve with the right key of mouse to open a **marking menu** where you choose option **Control Vertex**. Vous will see a great quantity of points
- In order to better handle this curve it is good " to simplify it ": select the curve, then the menu **Paint Effect->CurveUtilities-> Simplify Stroke Path Curve**.



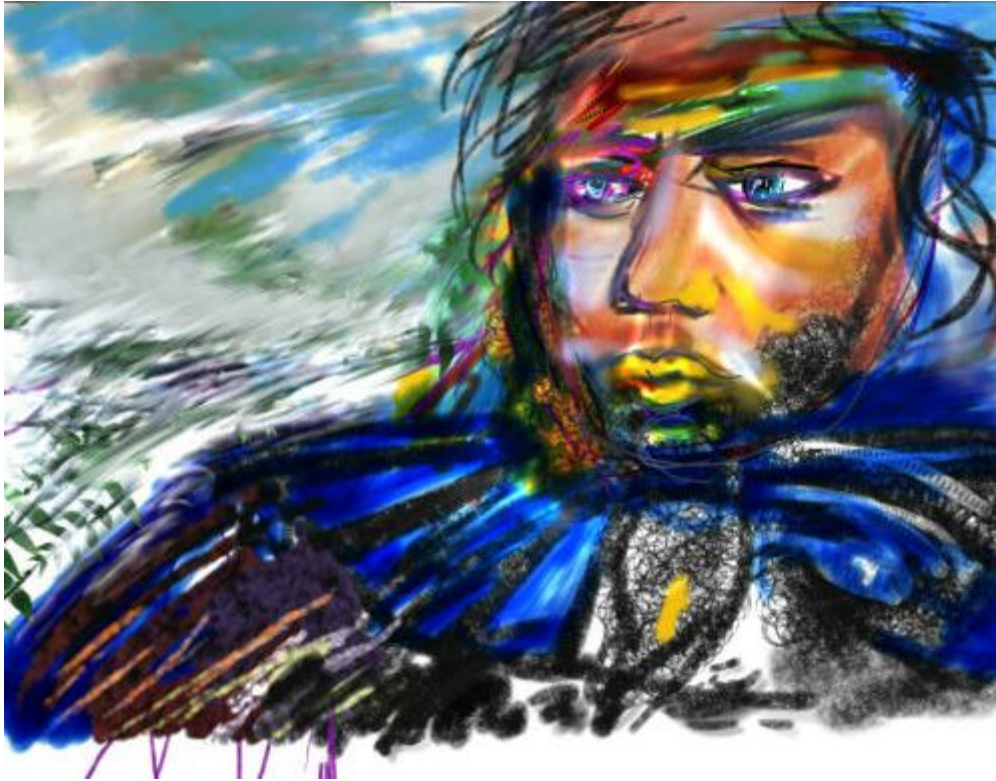


A brush can be connected with a curve :

- Create a curve and keep it selected
- Choose a brush (**Visor-> Grasses->Corn2.mel**)
- Connect this brush to this curve : **PaintEffect->CurveUtilities->Attach Brush to curve**

PAINT IN 2D (Canvas) :

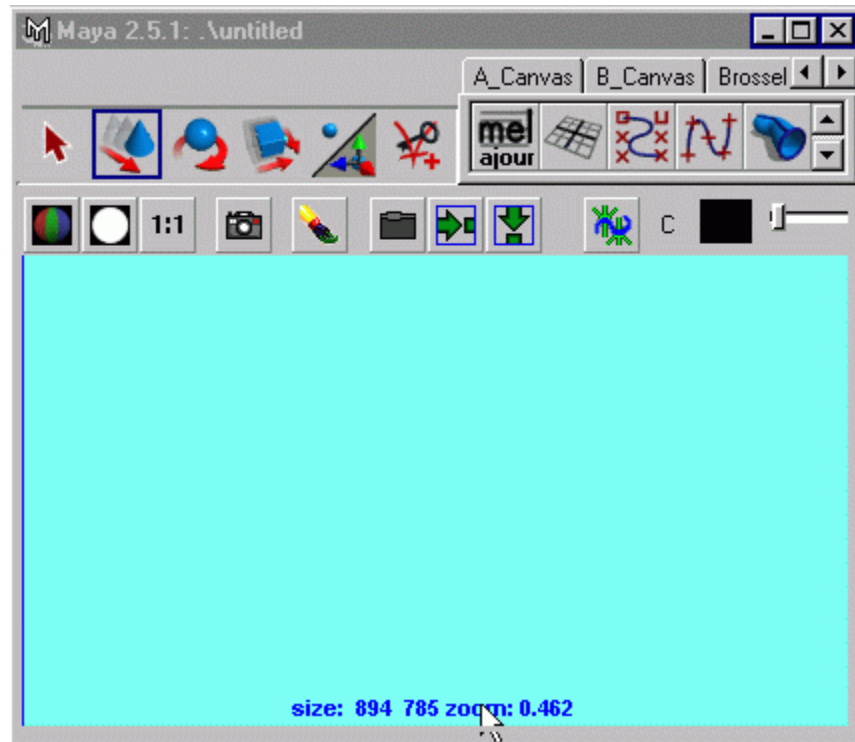
We will try out the possibilities of painting of Paint effect. We propose here to carry out an this kind image:



Définition and creation of brushes :

Preparation of the workin space :

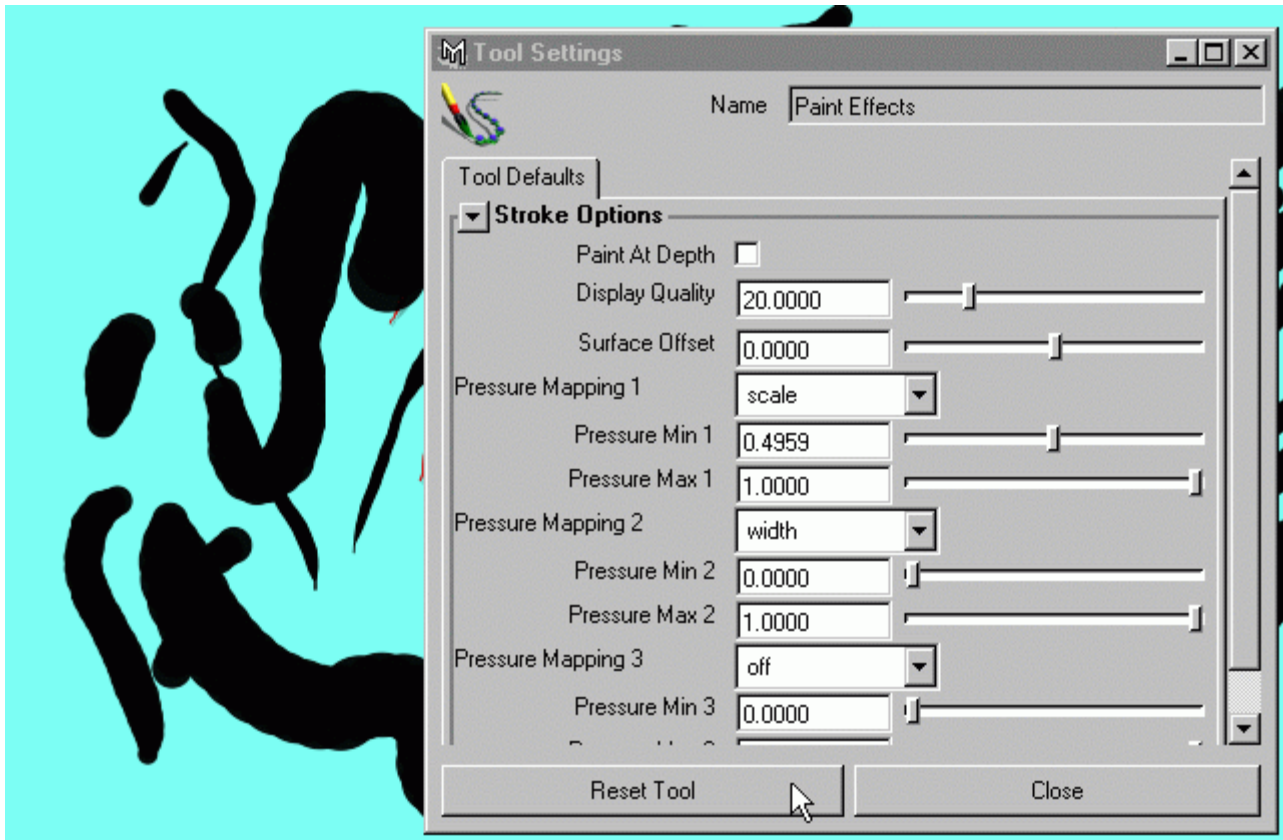
- **Options-> ShowOnlyViewingPlane**
- **Open shelf; MarkingMenu ->Markingmenu est ->Shelf**
- **Go in canvas mode : Key 8**
- **The cursor in this window, activate with the right key of mouse the popUpMenu and choose option Paint->paintcanvas, you obtain this workin space :**



NOTICE ON THE USE OF A SENSITIVE TABLET:

*The cursor in this window, activates with the right key of mouse the popUpMenu and chooses the option **Paint->UseSTylusPressure=ON***

*In PFX the variation of theline is controlled by the pressure of the cursor. The limits of pressures can be defined in **PaintEffects-> Paint effcets tools** :*



Brushes types and acces to presets :

You have access has a whole of already prepared brushes :

- Activate the Visor (**Window->Visor**)
- Then go in the repertory **/aw/MAYA2.5/brushes**

Pour rendre plus facile le choix des brosse vous pouvez vous fabriquer des "shelf". Pour les remplir il suffi de cliquer sur l'icone du preset puis déplacer vers le shelf.

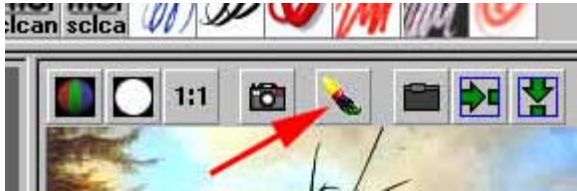
To make easier the choice of the brush you can manufacture " shelf". To fill them it been enough to click on the icone to the preset then to move towards the shelf.

Open PAINT EFFECT : "CANVAS"	KEY 8
SIZE OF STROKES	PRESS/RELEASE b
STROKE OFFSET ON SURFACE	PRESS/RELEASE M

THE PRINCIPAL SHORT CUTS OF PAINT EFFECT

PAINT BRUSH SETTING

- From the visor select a brushe (like **pens->calligraphics**)
- Let us notice that one can create a brush, and one can then start from initial paramètres while making:: **Paint Effects->ResetTemplateBrush**
- Open the Brushe tool settingof a brushe while clicking on the following icone:

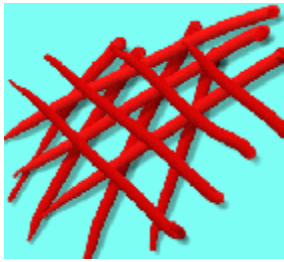
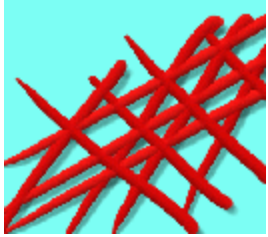



Comment on the principal attributes:

Brush Type use a brush in brush mode, aerographe or marker allow: Paint a rubber, a smear brush or blur

Global scale allows to define the size of the brush, the key **B** allows to regulate this value interactively.

Channels : You save the canvas on which you paint in IFF format. You can choose to save the colors plans, the plan masks or the plan of depth(zdepth) depth is the distance from the object to the camera (expressed in levels of gray). In order to understand its use please choose a brush in pencils : goopinkred then to try out the combinations following

DEPTH	MODIFY DEPTH	
OFF	OFF	
ON	ON	
ON	OFF	

(ON ON is well adaptee for grass and the foliage...)

To save images of Canvas :

- With the third button of mouse you will choose in the popup menu **canvas->save ou canvas save as**. Or you will choose the icone file being in the window canvas right of the icone of

opening of the window "Template brush editor"

If the mask is active the icon canvas will allow to post the mask of the image.(white circle on black background)

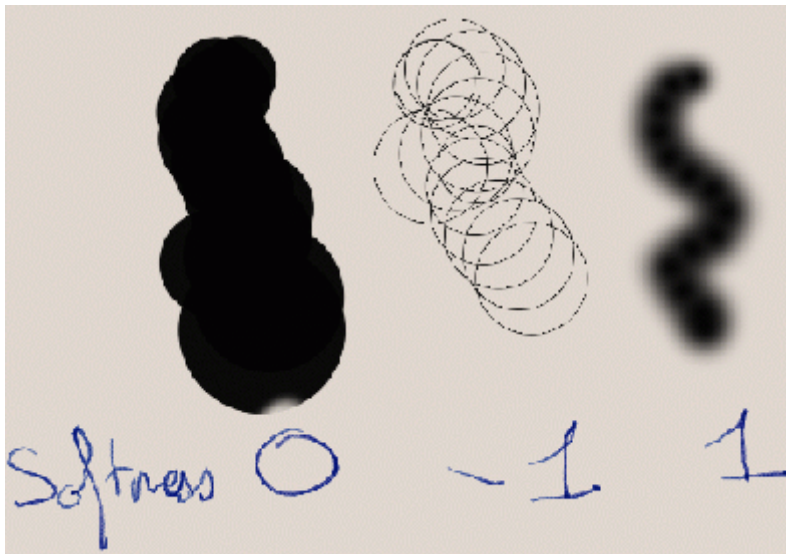


During a work you can activate or not the use of the mask. The mask and the colors plans can thus be different...

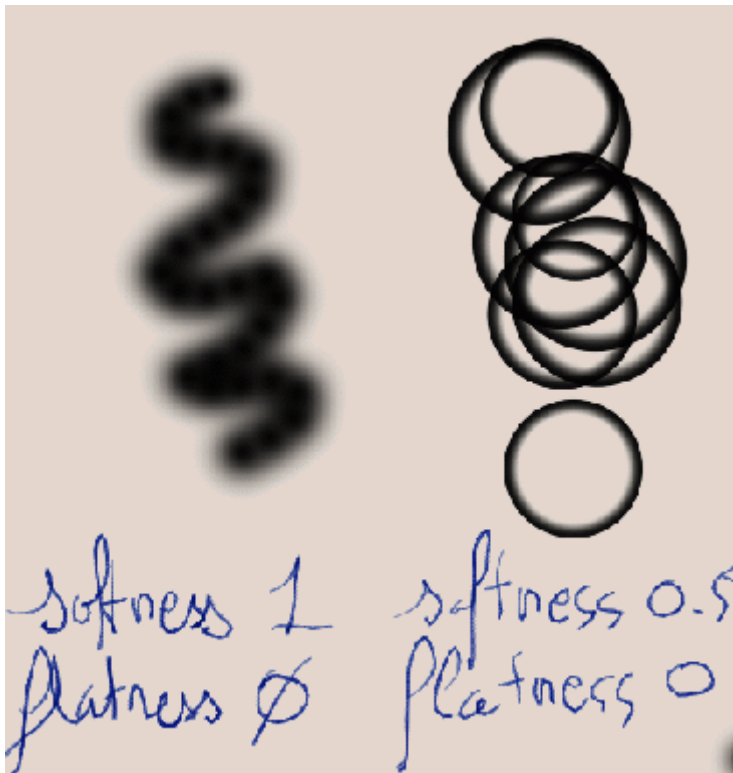
Brushes profiles :

Brush Width : To define the size of the brush in MAYA unit

Softness : Allows to treat the edge of the brush



Flantess1 : allows to treat the distribution of the pixels has the interior of the brush



Stamp density : spacing enters the brushes

Screen path width(this option does not have effects in canvas mode)

- In Perspective view move in space to show with screen **path =ON** you respect the working scale of Maya

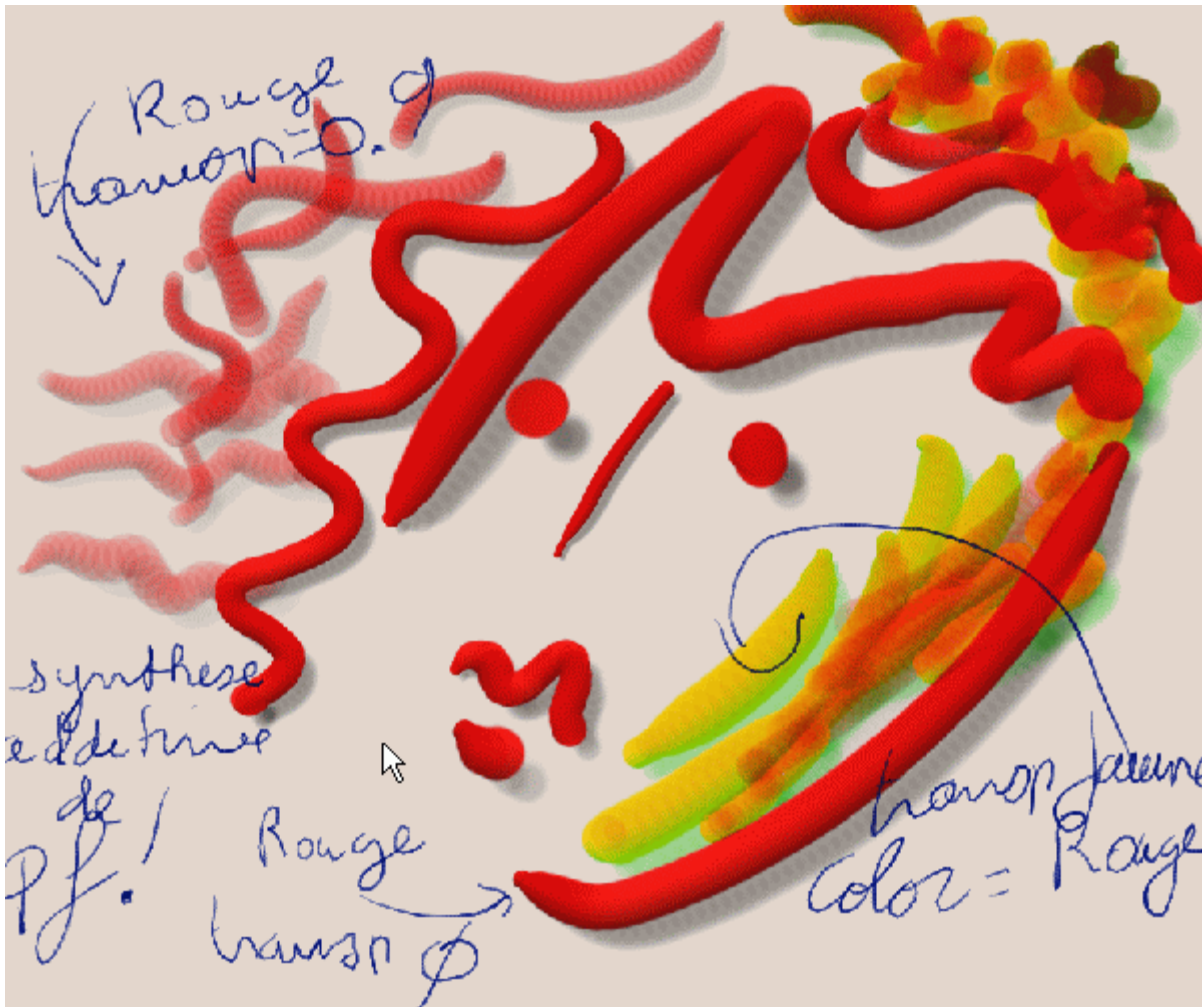
Shading :

You will give here the color, the transparency and the incandescence of a brush ;

Blur intensity is active that if the type of the brush is defined like blur.

Edge antialiasing antialiasing of the edge of the brush. (Test a brush of softness=0 with and without antialiasing)

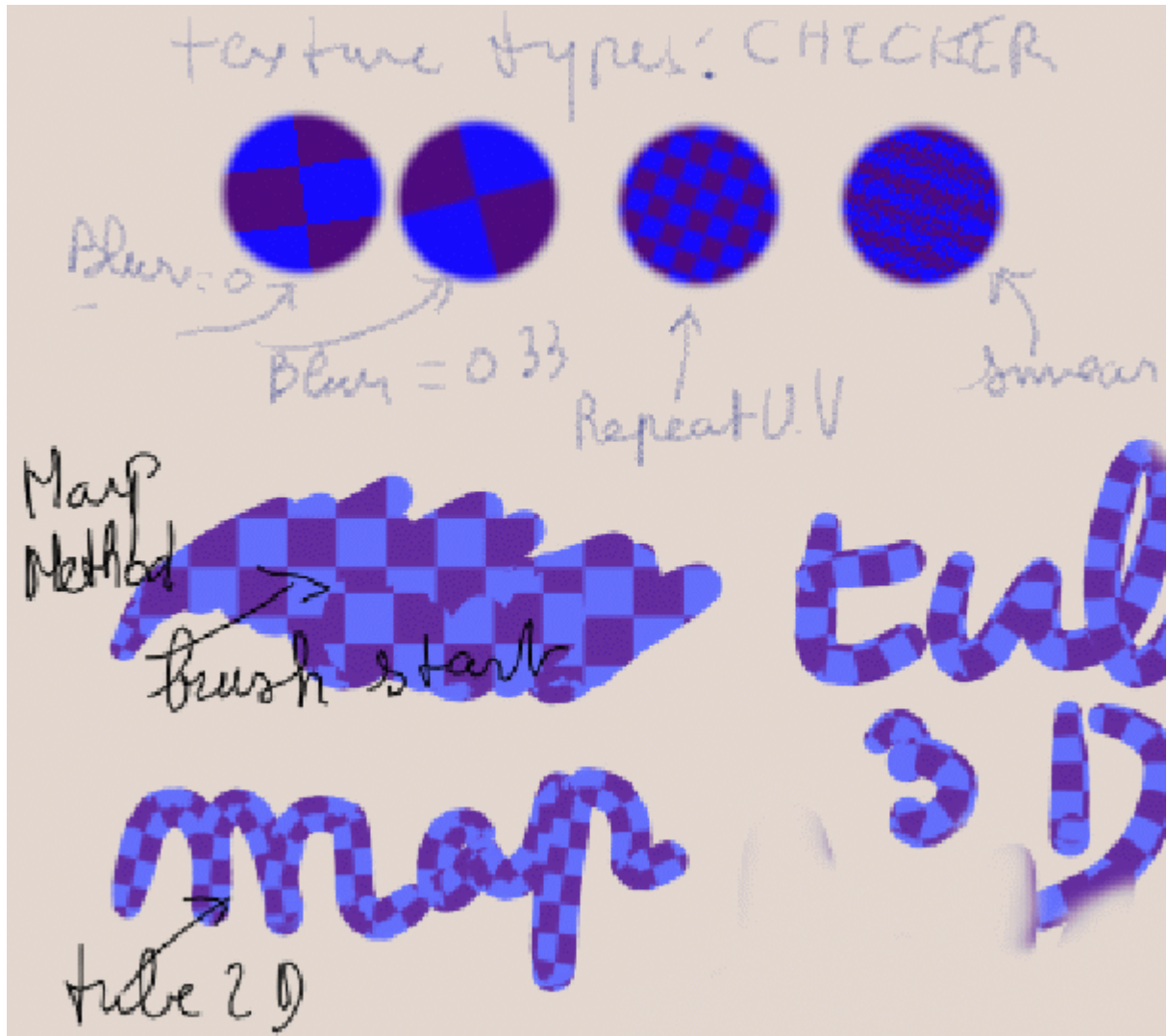
NOTICE : You can obtain additive effects of color if you give a color to the transparency :



Brushes textures :

Textures of brushes can be of dammier type, degrades out of U or v or fractal.

- Test some modifications of parameters :



- The Part Shadow Effects will make it possible to create a shade of the feature: to try to modify the distance, the transparency
- In the Glow part. give a color an intensity (glow) and a dimension (Spread)

Restore brushes type :

When we work on image in canvas mode one an image, often we needs to erase a part or in transparency the effect of brush which one has just pose.

In this case the technique of brush by restoration of the basic image and not of the background proves to be necessary.

This type of brush is on Eclipse or StudioPaint.

This example shows how in Paint Effect we can produce this type of brushe

Here, we will take the example of the modification of a mapping of file on a surface.

NOTICE ON THE PREPARATION OF THE MAPS:

It is more practical to create two files of the image than you will use:
One for the map.

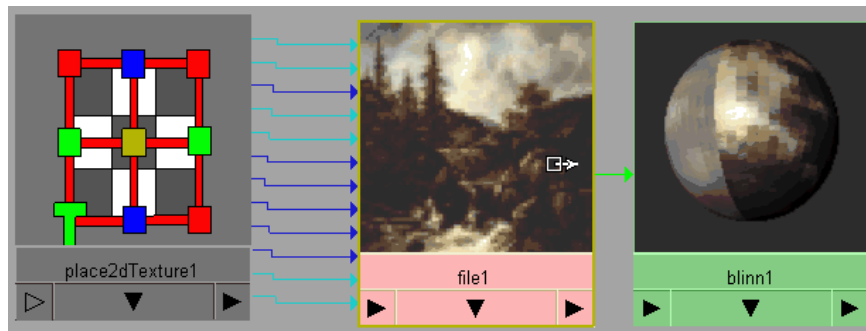
(In our example : *MapRuisdael_Raleigh_Spruces_warefall.jpg*).

One other for the stroke

(In our example : *StrokeRuisdael_Raleigh_Spruces_warefall.jpg*).

Map an image on a surface :

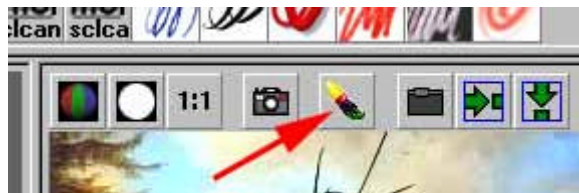
- Go in **perspectiv vue**
- Create a plan: **Create-> NurbsPrimitive**
- Create a directional lighte : **LIGHT>CreateDirectional Light**
- Direct the lumière (**rendering mode : key7, and keyT**)
- Open **HYPERSHADE**, Choose a " **material Blinn** " and map on the color the file which you prepared :



- Apply this shader on the surface

Create restore brushe

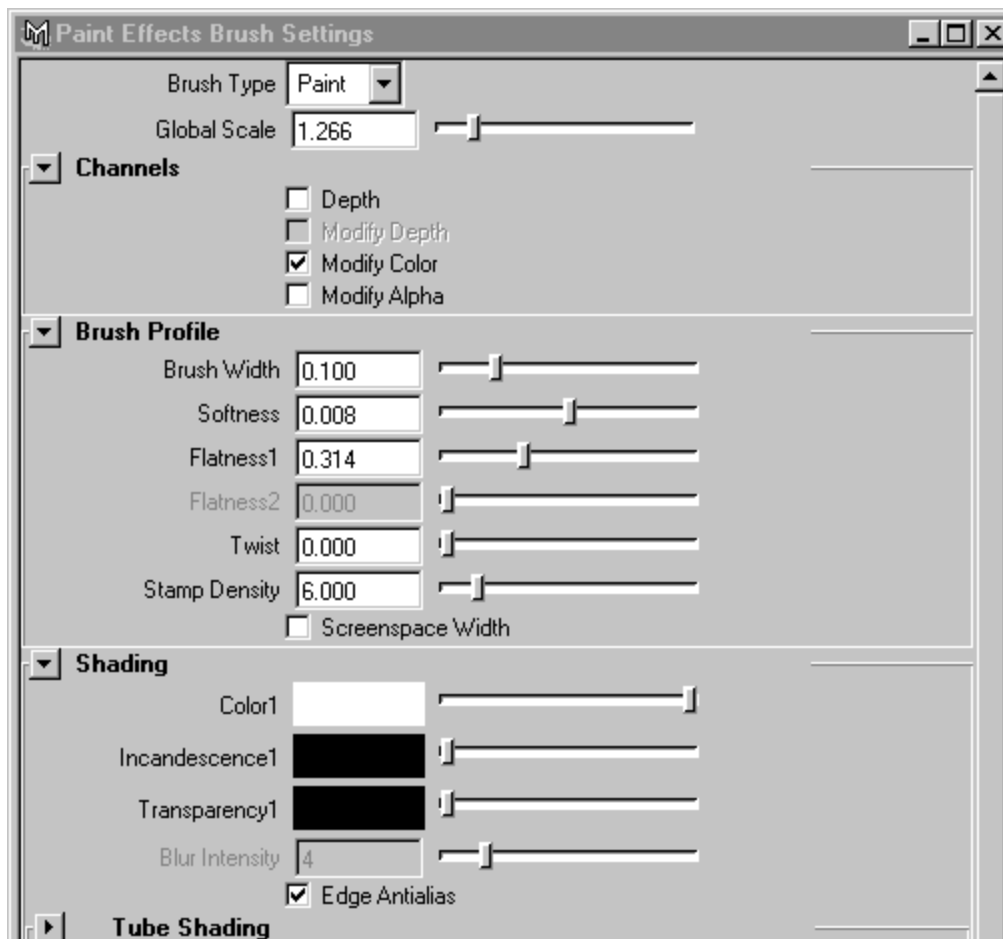
- On the perspective window activate Effect Paint by activating key 8
- The cursor positioned in this window press on the right key of mouse
- and choose the option **Paint->PaintCanvas** to test the manufacture of your brush.
- First, You can initialize the values of a brush: **Paint Effects->ResetTemplateBrush**
- Open the window of Brushes attributs :

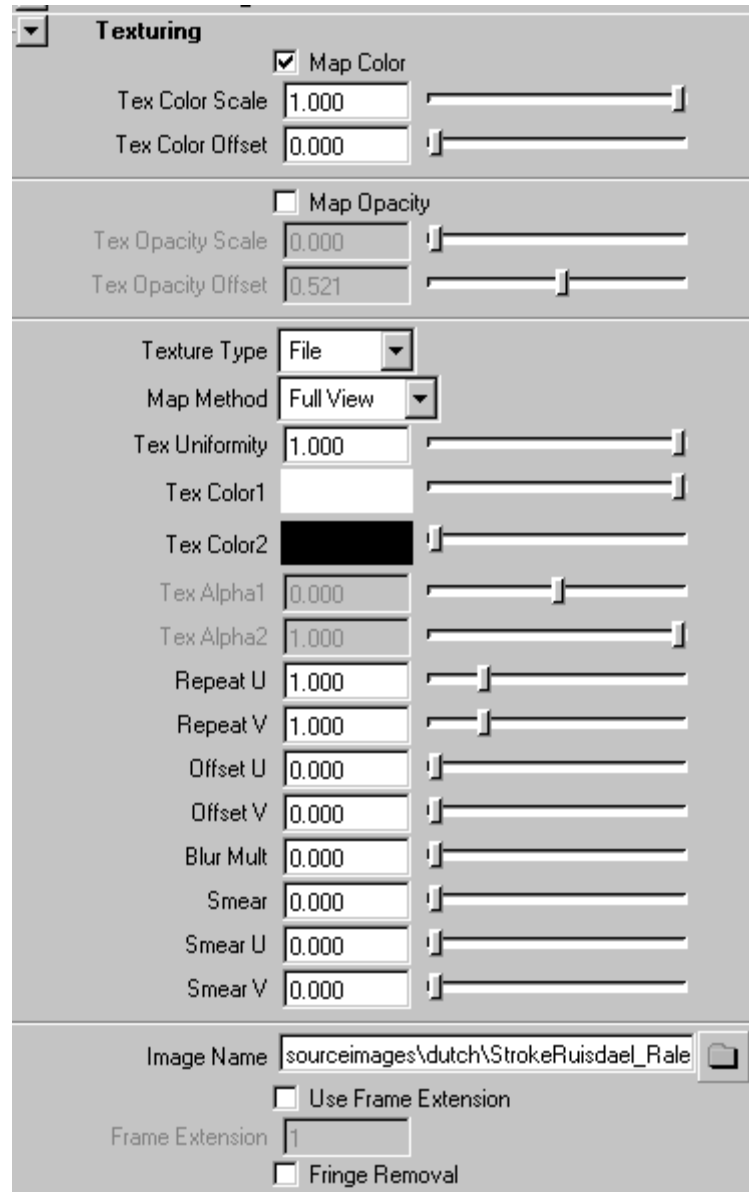


- If for example you want a brush of this type:



- You must have the parameters of following attributes:





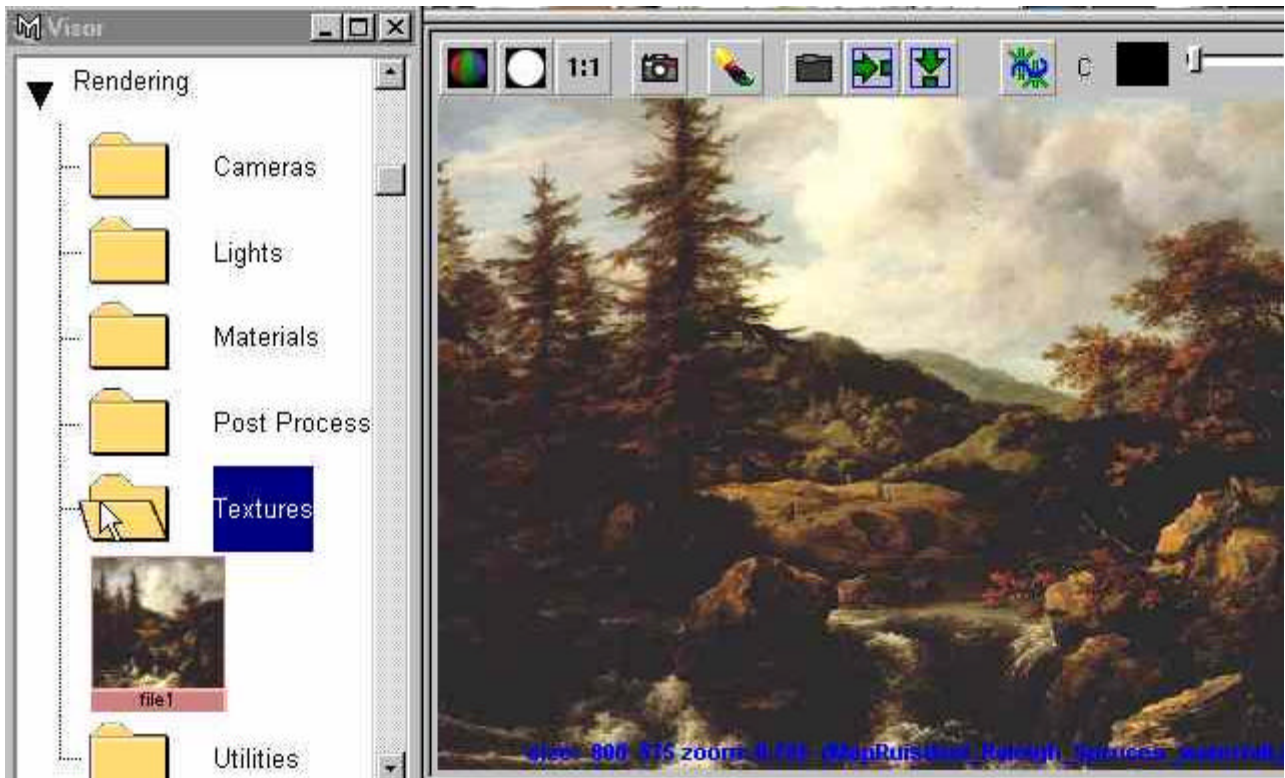
- Save this brush like new " preset " in a shelf : **Paint Effect-> Save Brush Preset**



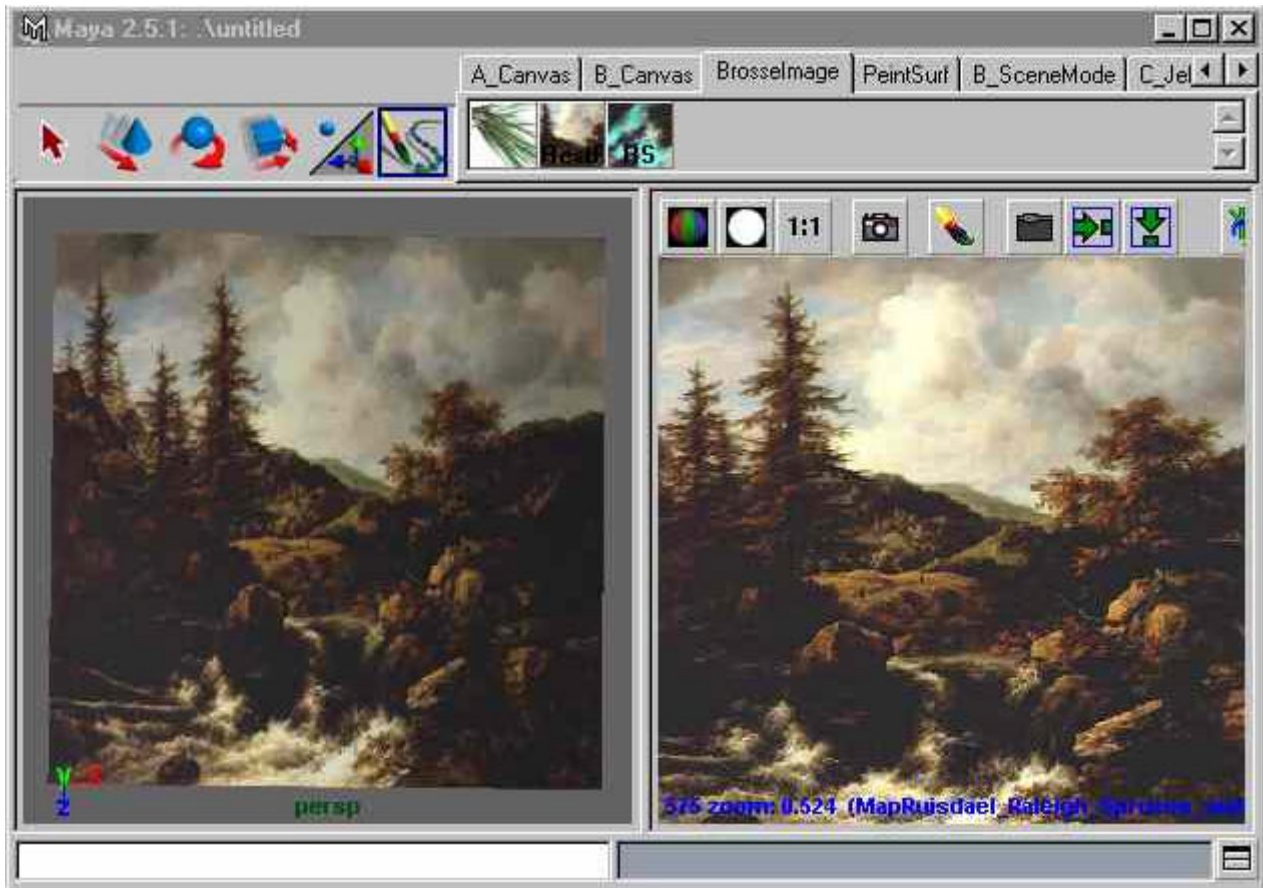
- Clean the canvas, then deactivate the canvas window of paint Effect while pressing on **key 8**.

Opening Painteffect window :

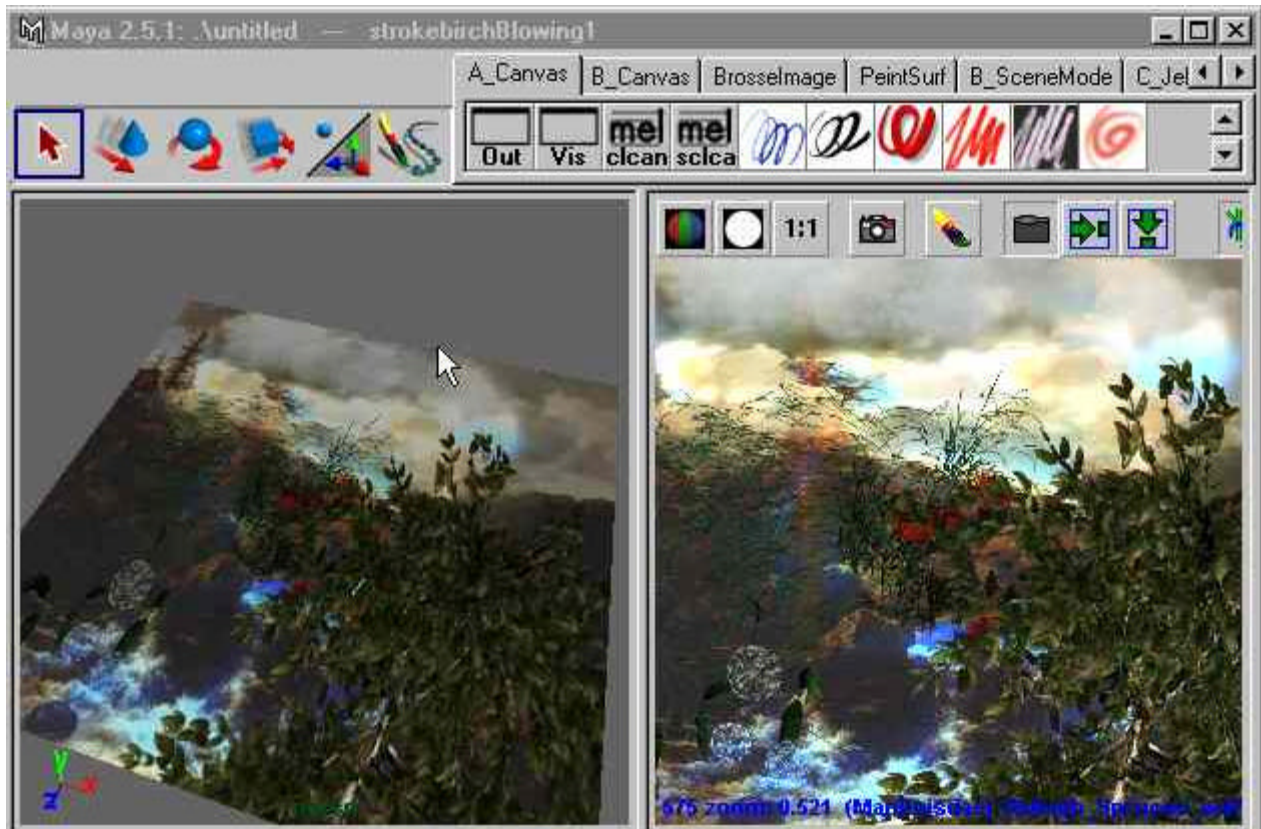
- Divide your space of work into two parts : **Panel->Layouts>2 side by side**
- On the right-hand window activate Effect Paint by **key 8**
- The cursor positioned in this window press on the **right key** of mouse
- Choose option **Paint->PaintCanvas**
- From **Window->Visor** click and drag the file of map on the Canvas window



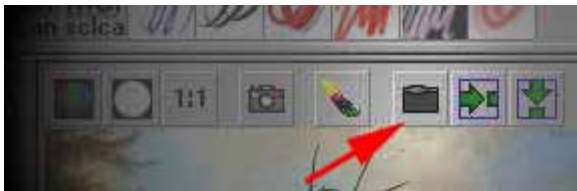
- Thus, in the window of right-hand side you have your geometrie with the map, in the canvas the map which you can work :



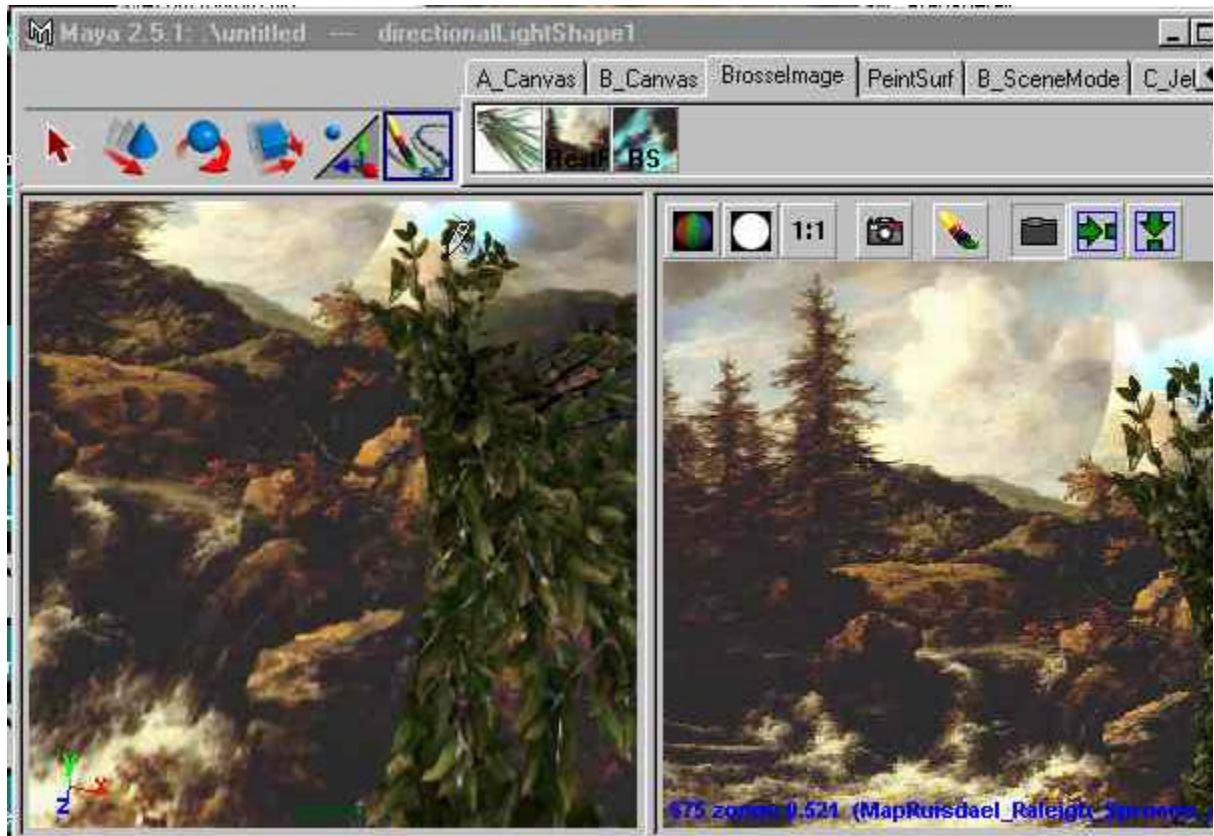
- You can work in the surface of the canvas:



- The update of the file map is done by activating the **icone folder** of the canvas window :



- The brush restores makes it possible to erase the parts which one has just worked by finding the bottom that one has map on surface:



TO PAINT IN A 3D SPACE 3 D

PAINT EFFECT can paint on a surface or well in space.

- Choose in **visor** a grass brushe
- **Open perspectiv view .Draw a grass line...**
- You notice that as long as you draw you will see the grass , As soon as you stop viewing is simplified.
- Move camera,
- Now, select a stroke and move it in space
- If you want to plant a field, select one of Stroke , do **EDIT->DUPLICATE** option : give a displacement in xyz, a number of repetition, in instance mode.

If you open attribut editor of the selected stroke, you have access to position node : *strokegrassclump1*. You can position or animate the stroke in space.

With the shape node : *strokeShapegrassClump1*. You define the attributes described the quantity and the characteristics of seeds planted along the furrow:

Sample density : spacing of the seedlings

seed : a number of varieties of seeds.

Draw Order : it is the set of priorities of the features of brushes. (>0: in front of. <0: behind)

Surface offset : .When one draws on a surface, it is the distance from the feature compared to

surface.

smoothing : Smoothing of the curve CV's

This option makes it possible to deaden the effects of step

- In top view draw a curve with many "zigzag"
- modify smoothing value

Motion Blur : must be used in animation and is returned using the blur

definition of attributes for orientation and length of brushes along a curve :

- Choose in view a fire brush
- Open Perspective view. Draw a line
- Modify **end Max Clip** value to 0, apply a keyframe
- Modify **end Max Clip** value to 1, apply a keyframe
- Play : a trail of fire lengthens...

Normal direction will direct shoots...

TUBES BRUSHES ATTRIBUTES

Les plantes et les arbres sont de type tube. On a accès à leurs paramètres de formes dans le noeud de brosse sous l'item Tubes.

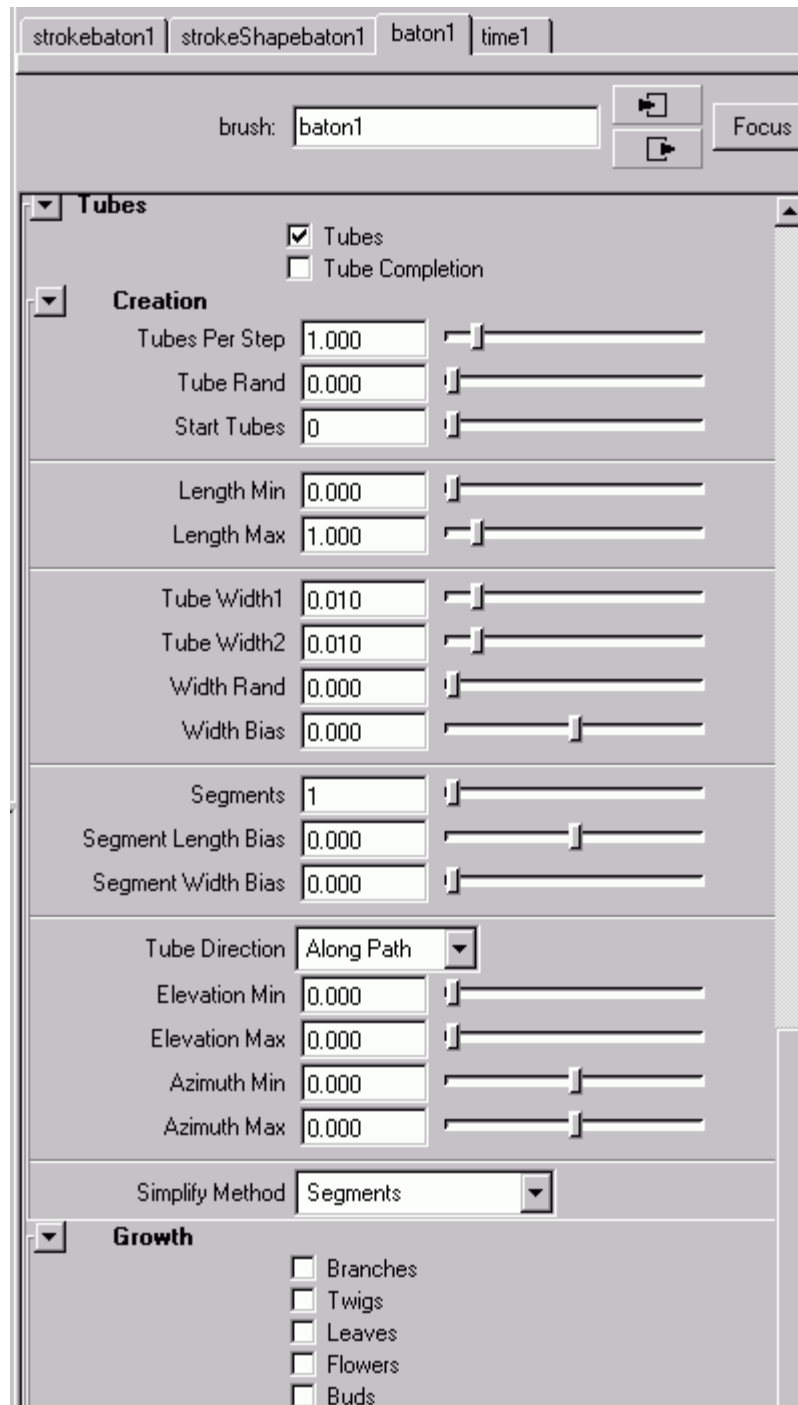
The plants and the trees are of type tubes. There are access their parameterized of forms in the node of brush under item Tubes.

Creation of a brush tubes basic: the stick

Tube Completion On : The tubes are of the same length along the feature of the brush

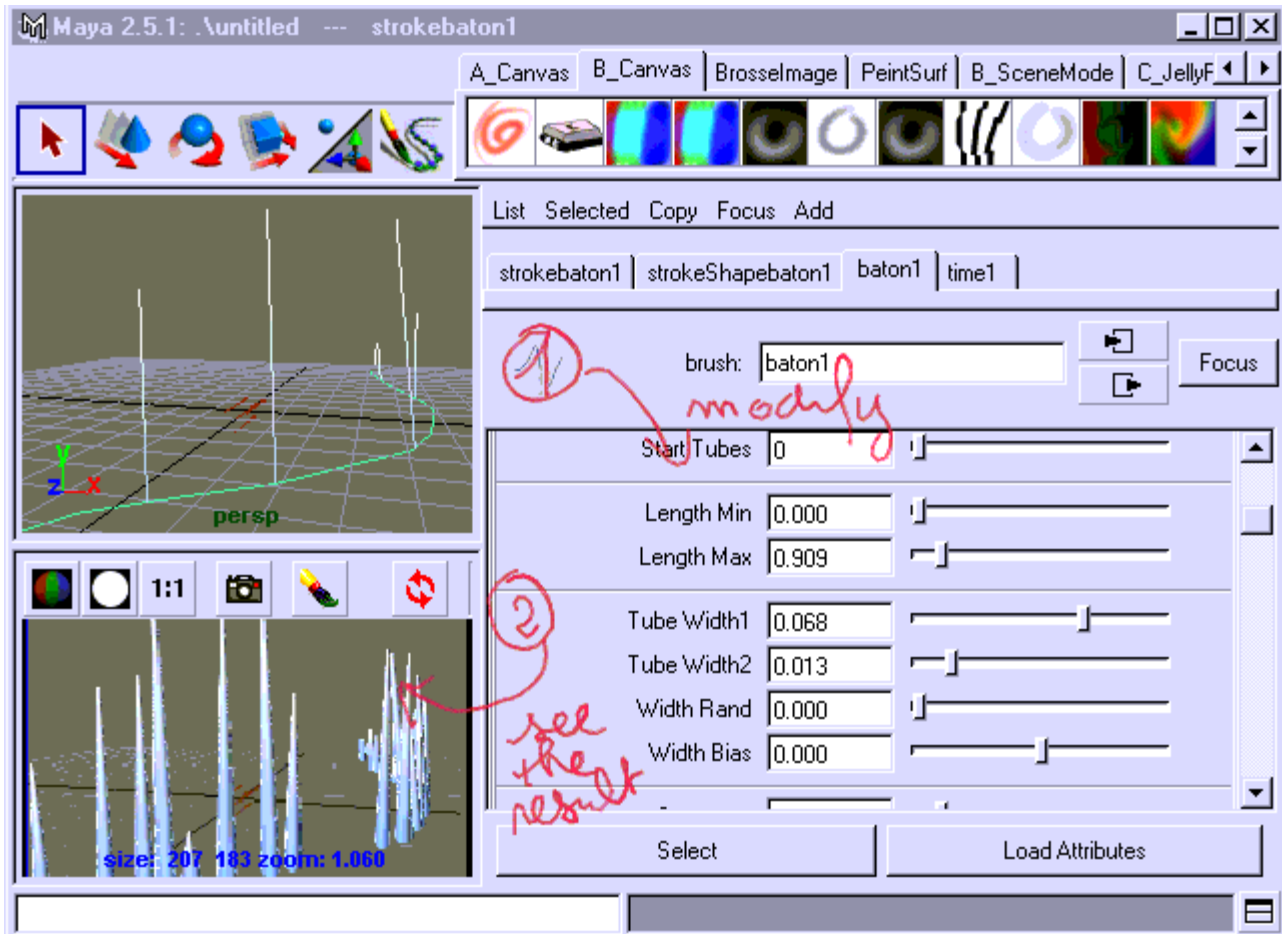
Tube completion Off the tubes are reduced along the stroke

- Go in canvas mode clicking 8 Key
- Open **Attribut editor**
- Do : **Painteffect->Reset template brush**
- Draw a stroke on canvas or use a tree brush and draw a stroke on canvas
- In attribut brush in part tube choose these parameters :



- Save this brush in your shelf
- **Paint effect ->save presets**

A good way of evaluating the modifications of parameterized is to choose this organization of work,

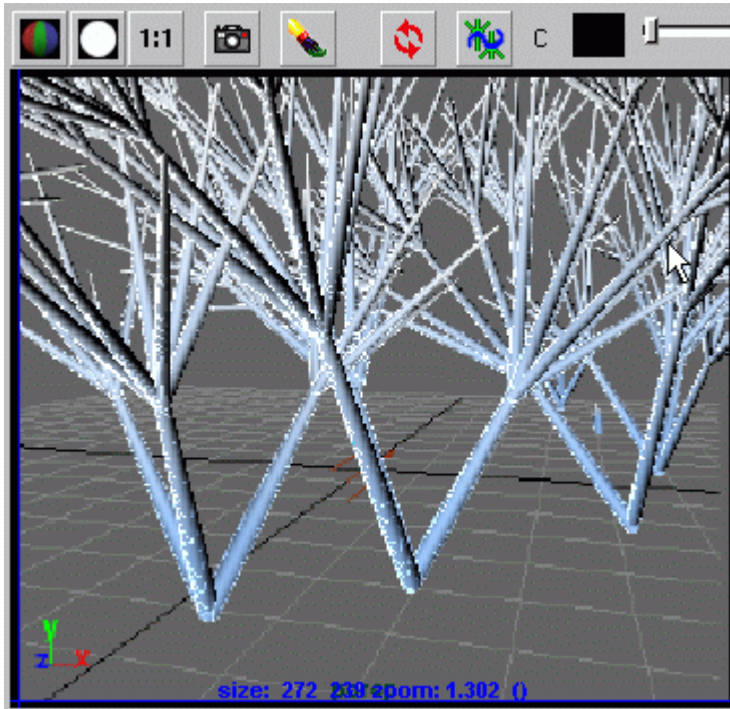


To post the result of the modifications quickly, configure the values of resolution rather low

Places the cursor in the Canvas and press on the right key of mouse to activate Resolution=50%.

Verify if STRoke Refresh show Rendered)

Test valeurs of this type by activating the creation of branches:



Tubes

Tubes
 Tube Completion

Creation

Tubes Per Step

Tube Rand

Start Tubes

Length Min

Length Max

Tube Width1

Tube Width2

Width Rand

Width Bias

Segments

Segment Length Bias

Segment Width Bias

Tube Direction

Elevation Min

Elevation Max

Azimuth Min

Azimuth Max

Simplify Method

Growth

Branches

Growing attributs :

You can define the orintation and the number of branches

littles branches

the leaves

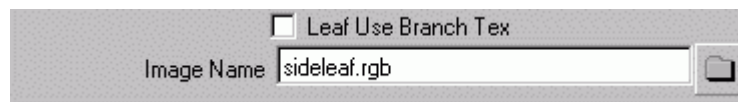
the flowers

the buds

Notice about the leaves

A scan of Leaves can be mapped. Under leaves desactivate LeafUseBranch Text an reach an image of leave

Its same things for flowers



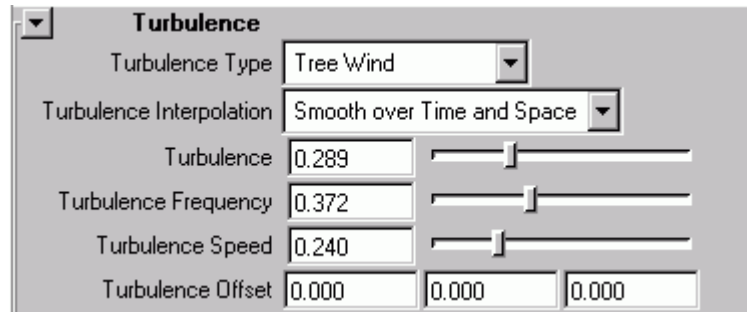
ANIMATION

The animation of the elements is done by deformation of the tubes or by application of dynamic to the tubes. Under item the tube you will find under behaviour :

Displacement, forces, turbulence, Spiral, Twist

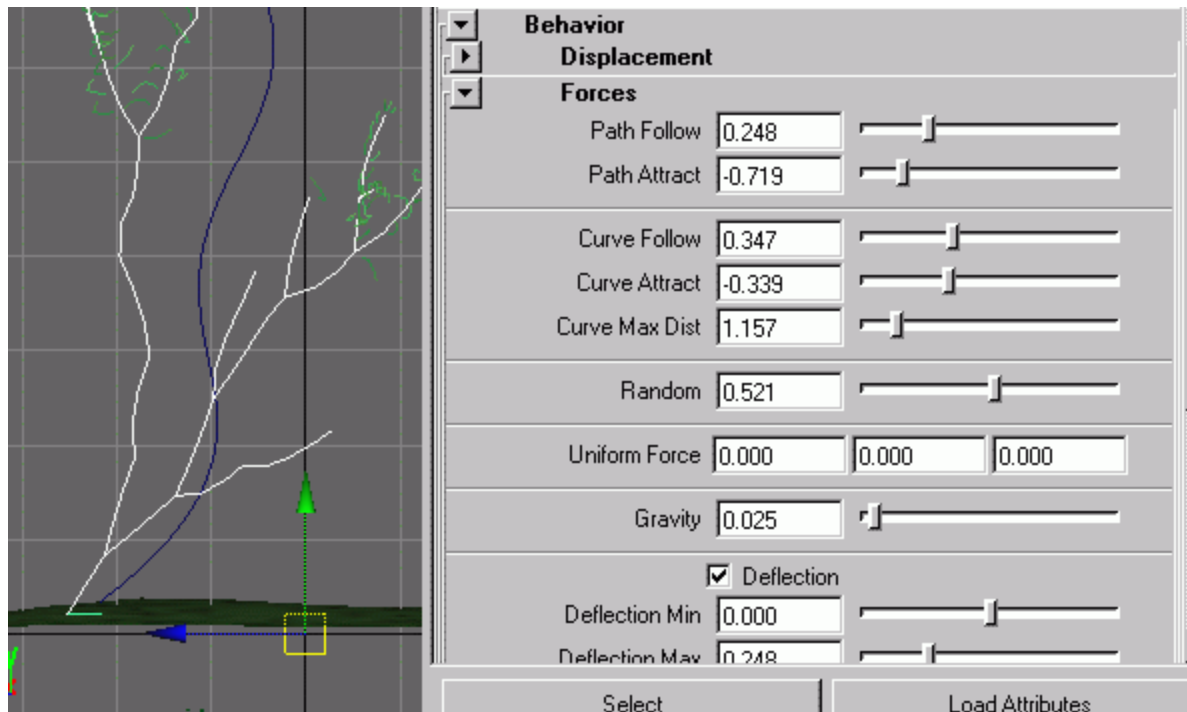
Example of animation of a tree by turbulence

- In Perspectiv view create a plan: **Create-> NurbsPrimitive->plane**
- Choose an right scale
- To plant a tree on this surface made initially : **PaintEffects->Makepaintable**
- **FromVisor** , choose a tree and plant it!...Select the tree.
- Then open the attribute editor. Under the node of form of the tree (strokeShapeTree_canvas for example)
- You increase the quality of the brushe by using : **ObjectDisplay->Display quality**
- Under the node of the brush in the part Tubes, under behaviuor you find the Turbulence item, to give various values to see the influence. On each of these values you can give a key of animation.



Example of animation of a tree by a curve

- (From the example preceding).
- Create a curve on the basis of the bottom of the tree and going to the top of the tree
- Select the tree and the curve.
- To activate this curve of control made
PaintEffects->CurveUtilities->SetStrokeControlCurve

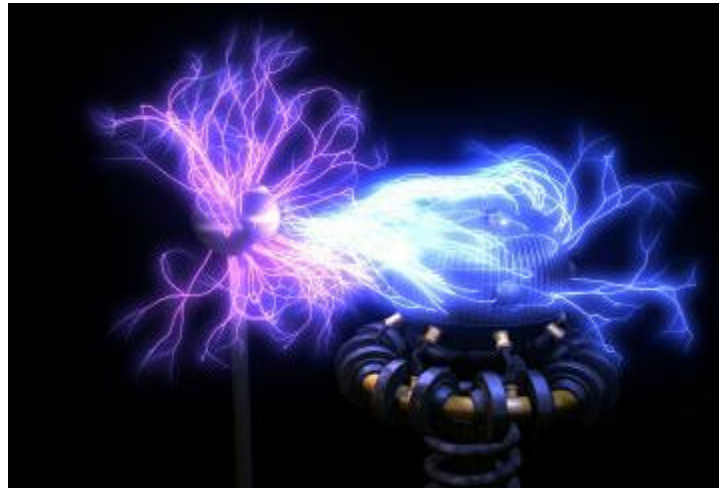


- **Curve Follow, Curve Attract, Curve Max dist** are the values which will influence the curve.
- Sélect curve CVs . By moving them you will modify the shape of the tree:



- If you select the plan and that you to move it the tree will be countered by the curve.

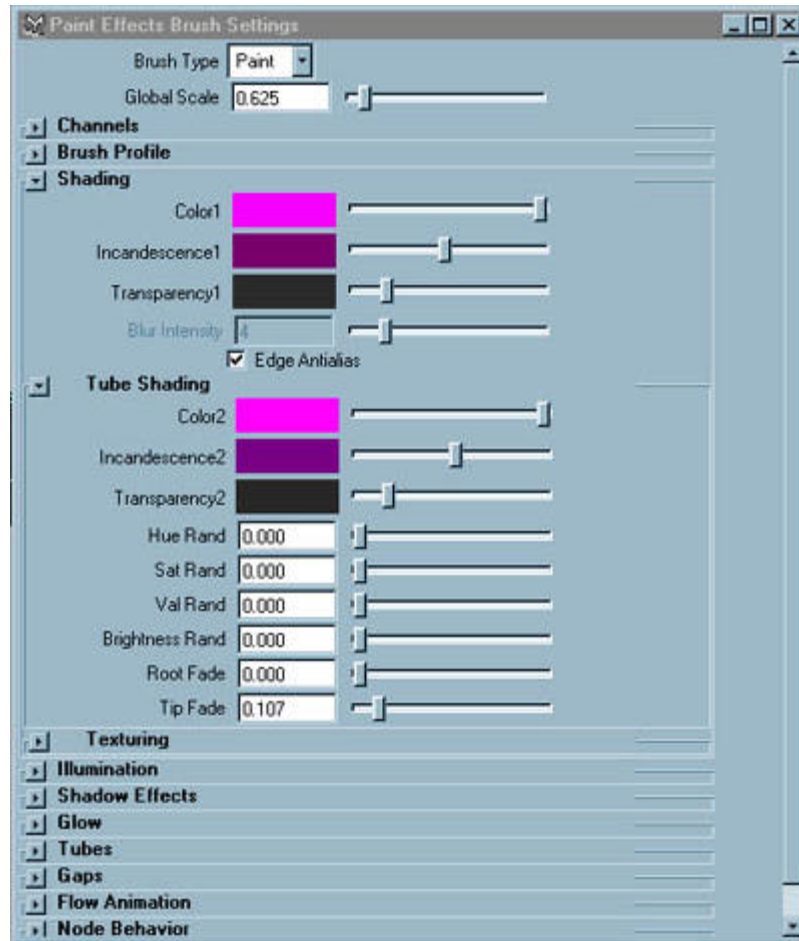
Tentacles animation



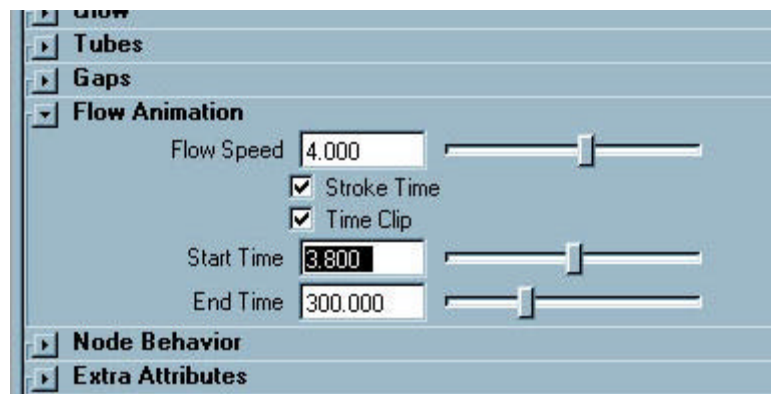
- open file pfx_testla.mb
- If you play animation you see that lights are animated then a smaller ball appears...
- Select the named sphere powerball and return the " paintable "
- Paint on this surface some electric flashes



- Play animation
- Go to frame 100
- Select strokes
- **(Edit->Select all by type-> Strokes)** and courbe37
- Do : **Paint Effects -> Curve**
- **Utilities -> Set Stroke Control Curves**
- Electricity will be attracted by the rising sphere: to play animation
- Around the frames 100 and 150, select the little sphere
- Made it "paintable", to paint electricity on it
- From **attribut editor** of this brush, modify shading values to obtain pink and violet flashes...



- Now we will define the moment or the second ball will start has to establish



Flow speed : Defines the speed (in cycles a second) of the effects of shearings, torsions, as well as the displacement of textures along the animated tubes. The positive numbers make a flow starting from the base. The negative numbers make them develop and rise from the end towards the base.

Stroke time allows the growth animation of the beginning to the end of the curve " stroke ".All that in in the time variation defined by start time and end time.

Clip time : Defines the beginning and the end of the animation of the tube.

Start time and end time : are expresses in seconds. If your unit of time is defined in 24/s for example (Options > General Preferences > Units), and you want to start has keys 80 you must then

enter an expression in the start time field.(write: =80.0/24 (the key must be in float : 80.0))