End User License Agreement

With the installation of Spline-Time Pro (the "plug-in") a contract is concluded between you ("You" or the "User") and motion gimmick - MediaArt (the "Licensor"), a company under German law with residence in Osnabrück, Germany. Whereas by using and/or installing the plug-in you accept all the terms and conditions of this agreement. In the case of non-acceptance of this license you are not permitted to install the plug-in. If you do not accept this license please delete the plug-in and all accompanying files and documentations.

1. General   Under this contract the Licensor grants to you, the User, a non-exclusive license to use the plug-in and its associated documentation. The plug-in itself, as well as the copy of the plug-in or any other copy you are authorized to make under this license, remain the property of the Licensor.

2. Use of the Software: You are authorized to copy the plug-in as far as the copy is necessary to use the plug-in. Necessary copies are the installation of the program from the original mail-attachment to the mass storage medium of your hardware as well as the loading of the program into RAM. Furthermore the User is entitled to make a backup copy. However only one backup copy may be made and kept in store. This backup copy must be identified as a backup copy of the licensed Software. Further copies are not permitted; this also includes the making of a hard copy of the program code on a printer as well as copies, in any form, of the documentation.

3. Multiple use and network operation (1)You may use the Software on any single hardware platform, Macintosh or Windows, and must decide on the platform (Macintosh or Windows operating system) at the time of installation of the Software. If you change the hardware you are obliged to delete the Software from the mass storage medium of the hardware used up to then. A simultaneous installation or use on more than one hardware system is not permitted. You may use this plug-in to render in network. This license is a personal license. It is not allowed to share this license to other users.

4. Transfer (1)You may not rent, lease, sublicense or lend the plug-in or documentation. You may, however, transfer all your rights to use the plug-in to another person or legal entity provided that you transfer this agreement, the plug-in, including all copies, updates or prior versions as well as all documentation to such person or entity and that you retain no copies, including copies stored on a computer and that the other person agrees that the terms of this agreement remain valid and that his acceptance is communicated to the Licensor. (2)You are obliged to carefully store the terms of the agreement. Prior to the transfer of the plug-in you should inform the new user of these terms. In the case that the new user does not have the terms at hand at the time of the transfer of the Software, he is obliged to request a second copy from the Licensor, the cost of which is born by the new licensee. (3) After transfer of this license to another user you no longer have a license to use the Software.

5. Updates If the plug-in is an update to a previous version of the plug-in, you must possess a valid licence to such previous version in order to use the update. You may continue to use the previous version of the plug-in only to help the transition to and the installation of the update. After 90 days from the receipt of the update your license for the previous version of the plug-in expires and you are no longer permitted to use the previous version of the plug-in, except as necessary to install the update.

6. Recompilation and changes of the Software (1)The recompilation of the provided program code into other code forms as well as all other types of reverse engineering of the different phases of Software/plug-in production including any alterations of the plug-in are strictly not allowed. (2) The removal of the security against copy or similar safety system is only permitted if a faultless performance of the plug-in is impaired or hindered by such security. The burden of proof for the fact that the performance of the program is impaired or hindered by the security device rests with the User. (2)Copyright notices, serial numbers or other identifications of the plug-in may not be removed or changed. The plug-in is owned by the Licensor and its structure, organization and code are the valuable trade secrets of the Licensor. It is also protected by United States Copyright and International Treaty provisions. Except as stated above, this agreement does not grant you any intellectual property rights on the plug-in.

7. Limited warranty (1) The parties to this agreement hereby agree that at present it is not possible to develop and produce software in such a way that it is fit for any conditions of use without problems. The Licensor warrants that the Software will perform substantially in accordance with the documentation. The Licensor does not warrant that the plug-in and the documentation comply with certain requirements and purposes of the User or works together with other software used by the licensee. You are obliged to check the plug-in and the documentation carefully immediately upon receipt and inform the Licensor in writing of apparent defects 14 days after receipt. Latent defects have to be communicated in the same manner immediately after their discovery. Otherwise the plug-in and documentation are considered to be faultless. The defects, in particular the symptoms that occurred, are to be described in detail in as much as you are able to do so. The warranty is granted for a period of 6 months from delivery of the plug-in (for the date of which the date of the purchase according to the invoice is decisive). The Licensor is free to cure the defects by free repair or provision of a faultless update. (2) The Licensor and its suppliers do not and cannot warrant the performance and the results you may obtain by using the plug-in or documentation. The foregoing states the sole and exclusive remedies for the Licensor's or its suppliers' breach of warranty, except for the foregoing limited warranty. The Licensor and its suppliers make no warranties, express or implied, as to noninfringement of third party rights, merchantability, or fitness for any particular purpose. In no event will the Licensor or its suppliers be liable for any consequential, incidental or special damages, including any lost profits or lost savings, even if a representative of the Licensor has been advised of the possibility of such damages or for any claim by any third party. (3)Some states or jurisdictions do not allow the exclusion or limitation of incidental, consequential or special damages, or the exclusion of implied warranties or limitations on how long an implied warranty may last, so the above limitations may not apply to you. In this case a special limited warranty is attached as exhibit to this agreement, which becomes part of this agreement. To the extent permissible, any implied warranties are limited to 6 months. This warranty gives you specific legal rights. You may have other rights which vary from state to state or jurisdiction to jurisdiction. In the case that no special warranty is attached to your contract please contact the Licensor for further warranty information.

8. Secrecy You are obliged to take careful measures to protect the plug-in and its documentation from access by third parties. You are not permitted to duplicate or pass on the Software or documentation. These obligations apply equally to your employees or other persons engaged by you to operate the programs. You must pass on these obligations to such persons. You are liable for damages in all instances where these obligations have not been met. These obligations apply equally to your employees or other persons he entrusts to use the plug-in. The User will pass on these obligations to such persons. You are liable to pay the Licensor all damages arising from failure to abide by these terms.

9. Information In case of transfer of the plug-in you are obliged to inform the Licensor of the name and full address of the transferee in writing. The address of the Licensor is stated in the manual and at the end of this contract.

10. Data Protection For the purpose of customer registration and control of proper use of the programs the Licensor will store personal data of the Users in accordance with the German law on Data Protection (Bundesdatenschutzgesetz). This data may only be used for the above-mentioned purposes and will not be accessible to third parties. Upon request of the User the Licensor will at any time inform the User of the data stored with regard to him.

11. Other (1)This contract includes all rights and obligations of the parties. There are no other agreements. Any changes or alterations of this agreement have to be performed in writing with reference to this agreement and have to be signed by both contracting parties. This also applies to the agreement on abolition of the written form. (2)This agreement is governed by German law. Place of jurisdiction is the competent court in Osnabrück. This agreement will not be governed by the United Nations Convention on Contracts for the International Sale of Goods, the application of which is expressly excluded. (3) If any part of this agreement is found void and unenforceable, it will not affect the validity of the balance of the agreement which shall remain valid and enforceable according to its terms. 12. Termination This agreement shall automatically terminate upon failure by you to comply with its terms despite being given an additional period to do so. In case of termination due to the aforementioned reason, you are obliged to return the program and all documentation to the Licensor. Furthermore, upon request of Licensor you must submit written declaration that you are not in possession of any copy of the plug-in on data storage devices or on the computer itself. 13. Information and Notices Should you have any questions concerning this agreement or if you desire to contact motion gimmick – MediaArt for any reason and for all notifications to be performed under this agreement, please write to: motion gimmick - MediaArt, Wörthstr. 20, 49082 Osnabrück, Tel: +49 541/8601240, email: info@motion-gimmick.de

Credits:
Thanks to **Maxon Computer GmbH Friedrichsdorf – Germany** for their friendly support.

Thanks to those who participated in the development of Spline-Time Pro:

Elian Koll, Fredi Voss, Andreas Recek, Lothar Mai (best Betatester ever!), Dietmar Jokisch (we created Spline2Helix for him ;)), Jörg Vogel, Lars Nagler, Andre Richter, Oliver Petz and Robin Blicker (for many nice examples)

Titel graphic and Icons: Elian Koll

Inhalt

1. Installation

After buying Spline-Time Pro, you will get an E-Mail with the desired plug-in file. Save the file onto your hard disk and use archiver like Winzip or Winrar to unpack the file. Move or copy the unpacked folder, called „Spline-Time Pro" into the Cinema 4D Plug-in directory. (f.e.: C:\...\Cinema4D\Plugins\...)

Spline-Time Pro is a huge collection of different tools to edit, adjust, animate and use Splines in many creative ways to get the beautiful and unique graphics you want.

The plug-in is running on the leading Operating Systems **Microsoft Windows** and **Mac OSX**.

Spline-Time Pro is the follower of the plug-in **SplinePack**. Since Cinema 4D Release 6.3 **SplinePack** developed more and more and comes now back as **Spline-Time Pro** with a lot more features and improvements.

One of the new features: you will have access to is the Quick-Tipp menu, which is integrated into the Attribute-manager of Cinema 4D. Short explanations and Tipps should simplify the handling with the plug-in.

Plugins
Execute Last Plugin
Add-the-Sea-R3 ▶
Spline-Time Pro-RC ▶

* Grow-Spline
* Morph-Spline
* Mix-Spline
* Spline2Helix
* Clone-This
* Multi-Tween
Straight-Spline
Connect-Spline
Branch-Splines
Poly-Spline
Object-Connect
Motion2Spline
Glue
Create-Toolbar

General Information

This plug-in can only be used with the 3D-Application Cinema 4D and at least the Release 12 / 13/ 14.

In this manual we are confining to the basic features of Spline-Time Pro, but be sure that there will be much more possibilities as shown in the manual. In addition to the documentation you should take a look at our Website, where you can find tons of example files and tutorials concerning Spline-Time Pro. (www.motion-gimmick.com)

We avoided giving limitations to many parameters of the tools, so it is time to unleash your creative freedom. But be gracious to your computer- and especially your memory capacity.

Except for **Motion2Spline** and **Glue** you can edit, animate and stack all single tools inside the Object-Manager.
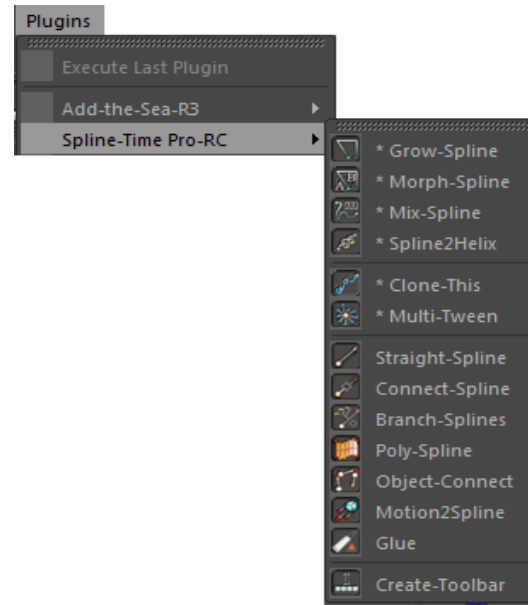
Usage

Spline-Time Pro introduces new ways to easy reshape existing splines and to generate completely new splines.

It can also be combined with a lot of other plug-ins on the Cinema 4D plug-in market:
All the tools inside **Spline-Time Pro** are working great together with plug-ins like Maxons Cinema4D tools Hair, Mograph, Sketch&Toon or Xparticles and Stormtracer.

Possible field of application:
Illustration / Fine Arts
Typography / Ornamental art
Visual Effects / TV-Opener / Motion Graphics
Product Design / Visualisations
Organic Modelling

2. Overview

In **Spline-Time Pro** you can find a bunch of different tools and every single tool has his own specific characteristics:

Splines with **Sound-TAG,**
Spline-Tools and **Extras**

Splines:

Grow-Spline: + Sound-TAG
The start- and endpoint can be manipulated.

Morph-Spline: + Sound-TAG
Morph between different splines.
(automatic animation per curve).

Mix-Splines: + Sound-TAG
Mix two splines to completely new splines forms.

Spline2Helix: + Sound-TAG
Create a helix along any spline

Connect-Spline:
Connect separat splines to one single spline.

Branch-Spline: + Branch-TAG
Creates trees of splines

Object-Connect:
Connects Objects from an Object-List with splines

Straight-Spline: + Bending-Tag
Default this tool creates a linear spline which can be curved, turned or bent by **Bending-TAG** at any places on the spline. You may put 1 or more **Bending-Tags** to one **Straight-Spline**.

Tipp 1:

You are able to combine all the single **Spline-Time Pro** splines. The result will end up with a new generated spline or *multi spline with a user defined number of points. The source splines will not react to the changes you make.

Once one of the tools contains one or more splines, the plug-in itself becomes a spline-object and can be used as a parametric spline with the standard spline tools inside Cinema 4D and of course with **Spline-Time Pro**.

*Multi splines
you get, when you combine multiple splines with the Cinema 4D in-house function „**Connect**" to one single spline

Spline-Time Pro expressly supports multi splines / segmented splines.

Tipp 2: Use **Spline-Grow** for example to reduce the general number of spline points.

Tipp 3: Use **Grow** to close other splines f.e. **Mix-Spline**.

3. Overview

Poly-Spline:
Creates meshes, spline-lists or multi splines out of splines.

Motion2Spline (Tracer):
Creates a **Centerspline** to animated objects inside an object hierarchy.
Works fine with Standard-Emitter, TP Particle-Geometry, Xparticles Generator, **Clone-This** or single animated objects.

Spline-Tools: for modelling or clone

Clone-This +Sound-TAG
Clones, spreads or animates objects, lights, light-effects and splines along a spline.

Multi-Tween + Sound-TAG
Creates an individual number of variations for **Clone-This** clones.
Multi-Tween morphs between morphable object or switches between other objects.

Extra-Tool:
Glue
Connects objects to selections

Where ever it is possible and makes sense **Spline-Time Pro** supports multi splines / segmented splines.

All parameters in the plug-in object, which are marked with an * can be controlled by sound. You can find the identical parameter in tool and TAG.

The TAGs can be only started from the menu of the plug-in object.
(**Grow-Spline** starts **Grow-Spline Sound-TAG**, **Morph-Spline** starts **Morph-Spline Sound-TAG**...)

4. Functional overview of Spline-Time Pro

Tools creating Splines enhanced with Sound-TAG	**Extra-Tools enhanced with Sound-TAG**

Grow-Spline > *Parent-Object*
Usage:
1 spline or spline object > *Child-Object*

Multi-Tween > *Parent-Object*
Usage:
any number of objects > *Child-Object*

Morph-Spline > *Parent-Object*
Usage:
any number of splines or spline objects > *Child-Object*

Clone-This > *Parent-Object*
Usage:
1 spline or spline object as first *Child-Object* (path-spline)
 any number of Objects, Lights as second, third …..*Child-Objects*

Mix-Spline > *Parent-Object*
Usage:
2 splines or spline objects > *Child-Object*

Spline2Helix > *Parent-Object*
Usage:
1 spline or spline object > *Child-Object*
optional second spline as rail-spline > *Child-Object*

Tools creating Splines - no Sound-TAG	**Exta-Tools - no Sound-TAG**

Glue > *Parent-Object*
Usage:
any number of splines, spline objects or objects > *Child-Object*

Connect-Spline > *Parent-Object*
Usage:
any number of splines or spline objects > *Child-Object*

Requires a target object with point-, edge- or polygon selection(s) at any place in the Object-Manager.

Straight-Spline + Bending-TAG > *Parent-Object*
Usage:
1 spline / spline object > *Child-Object*
any numbers of **Bending-TAG**s

Motion2Spline > Dialog-Object
Usage:
Splines will be generated only once per call.
This tool is not stackable.
Close dialog when finished.

Object-Connect > *Object-List*
Usage:
Any number of objects anywhere in Object-Manager used by a list in the plug-in-menu to connect them with a spline.

You can save it as a preset.

Poly-Spline > *Parent-Object*
Usage:
any number of splines or spline objects > *Child-Object*

Branch-Spline + Branch-TAG > *Parent-Object*
Usage:
any number of splines or spline objects > *Child-Object*

5. Grow-Spline   grow or shrink splines, create new point count to splines.

Create Sound-TAG
This button creates a **Sound-Tag** behind the **Grow-Spline**. The menu of
the **Grow-Spline Sound-Tag** contains all **Grow-Spline** object
parameters marked with ***** .

The different values between identical parameters in object and tag
(...like Point Count) are important for animation by sound.

We describe this feature later in detail.

Point Count:
In (most) of **Spline-Time Pro** spline tools you can adjust the **Point
Count.**

Example:
Take **Grow-Spline** as a parent object in Object Manager. Use a setting
of 300 points in the Count frame.
Now add a **Mix-Splines** *(using 2 splines as sub objects)* with only 30
points in the setting of this plug-in.
Spline-Time Pro will now create a mixed spline with 30 Points. After
that **Grow-Spline** will subdivide this spline to 300 Points. If you now try
to smooth the spline by changing the **Type** the result may be not very
effective.

If you want to get an optimal result spline you have to rule the point-
settings from child object to the parent object. (not reversal)

Spline Start:
This parameter rules the growing from first spline point to the last one.
All spline points between **Spline Start** and **Spline End** will be moved in
relationship.

Spline End:
This parameter rules the growing from last spline point to the first one.
All spline points between start- and endpoint will be moved in
relationship.

Spline Start and **Spline End** parameters are working from minus up to
plus range. You need this for loop animations like bicycle chain for
example.

Tipp:
The number of points has no major influence to the performance of your **Spline-
Time Pro** scene. More important for the performance is the number of spline
segments.

9
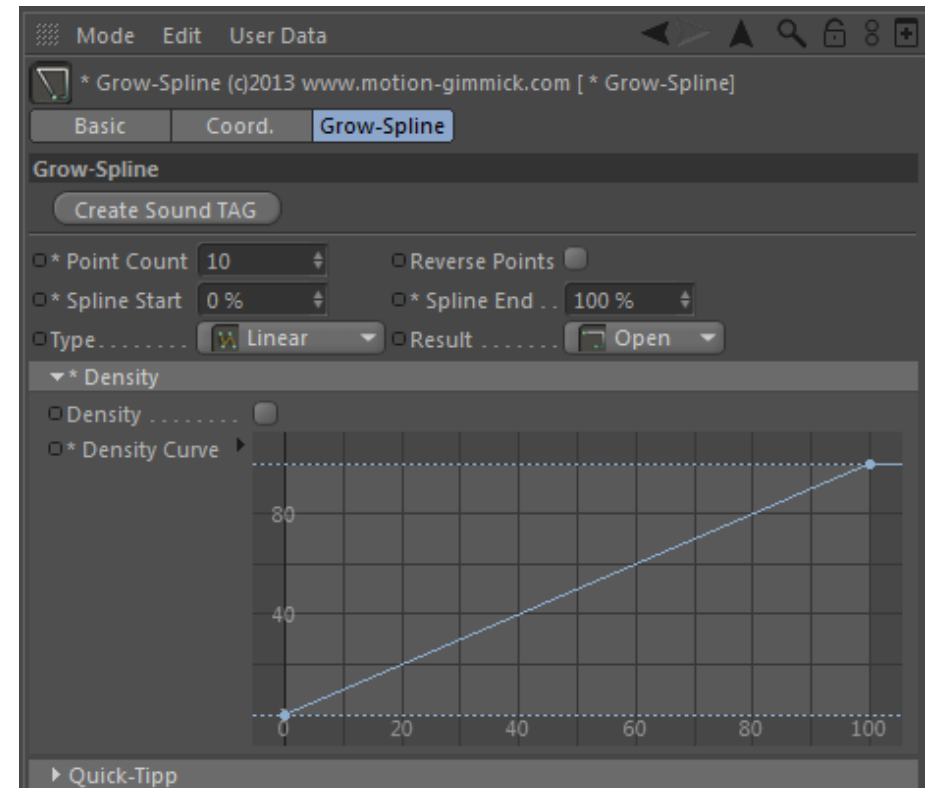
Result: close or open result spline

6. Grow-Spline / Distribution

Reverse Points:
Reverses the direction of your result-spline. This feature takes only affect using the spline in f.e. Sweep Nurbs or Loft Nurbs.

Without point distribution by curve:

Using point distribution by curve:

Distribution:
If you use this feature you can use the corresponding curve to ensure that points are positioned properly.

Grow-Spline acts only on one spline in the hierarchy.

7. **Morph-Spline**   **morph between any number of splines**
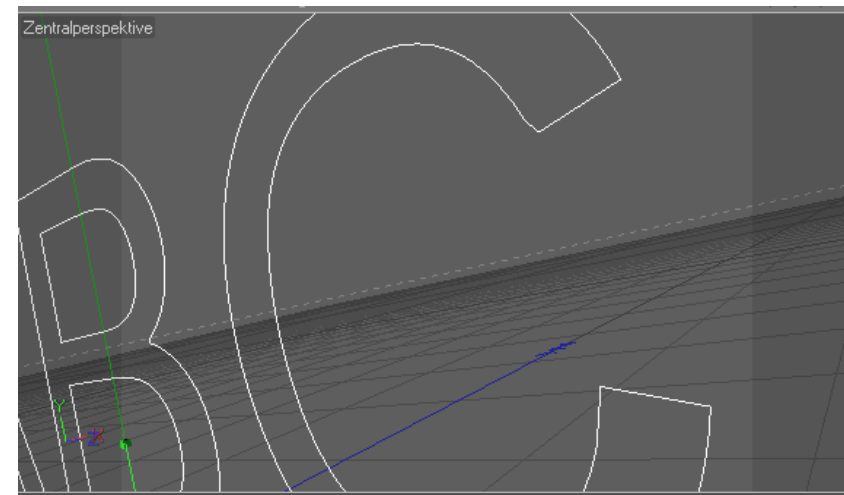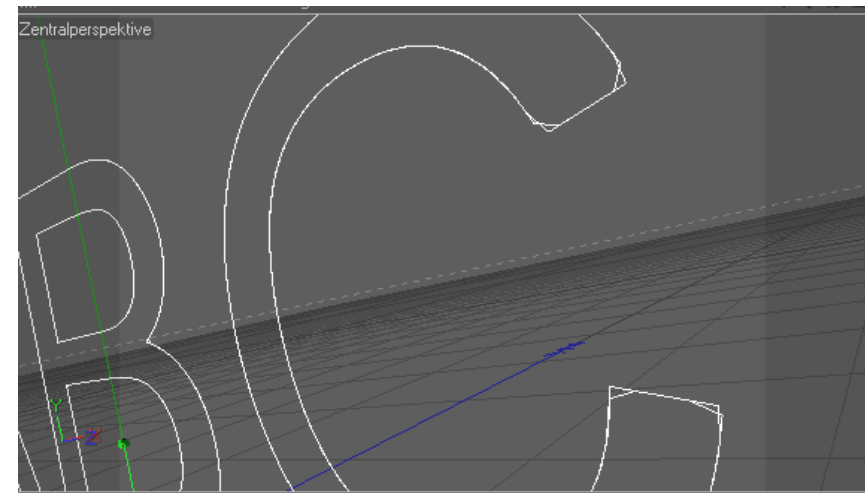
Create Sound-TAG

This button creates a **Sound-Tag** behind the **Morph-Spline** object. The menu of the **Morph-Spline Sound-Tag** contains all **Morph-Spline** object parameters marked with ***** .

The different values between identical parameters in object and tag (...like Point Count) are important for animation by sound.

We describe this feature later in detail.

Use Morph

When you activate morphing using more than one spline inside the tool, you will have control over the morphing state with the help of the curve.

Default: Morph time is document time.

The curve is working from Start-Frame to End-Frame of your Document. 0 means first spline in hierarchy   < > 100 means last spline in hierarchy

Curve Evaluation (Loop Setting):
- ☐   Go to the first frame of your animation: f.e. Frame 0...
- ☐   Use the mouse click on the left „Now"-Button
- ☐   Go to the last frame of <our animation: f.e. Frame 50...
- ☐   Use the mouse click on the right „Now"-Button

Now the morph from first spline to last spline in hierarchy will work between Frame 0 and Frame 50:
Once
Periodic or
Ping Pong

If you want to a spline to stay longer – only copy it to the object hierarchy again.

Position, angle and scaling of splines will be morphed, too.

8.   Mix-Splines   **mix any type of splines and multisplines**

Create Sound-TAG
This button creates a **Sound-Tag** behind the **Mix-Spline o**bject. The menu of the **Mix-Spline** Sound-Tag contains all **Mix-Spline** object parameters marked with ***** .

The different values between identical parameters in object and tag (...like Point Count) are important for animation by sound.

We describe this feature later in detail.

With this tool you can mix any type of splines and multi splines. In contrast to the **Morph-Spline** in **Spline-Time Pro** the shape of the splines are interpreted generously. Use the curve in Attribute Manager to create complete new splines from both root splines in **Mix-Splines**.

Mix Splines works with 2 splines or 2 multi splines.

If this is not enough, the tool can be stacked arbitrarily.
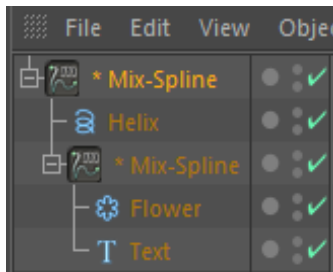
If you use **Curve** the **Mix-Splines** parameter is out of order. Instead of the parameter now the curve rules the mixing.

The **Mix Curve** can be animated by keys.

All parameters will be mixed: Also position, scale and angle.
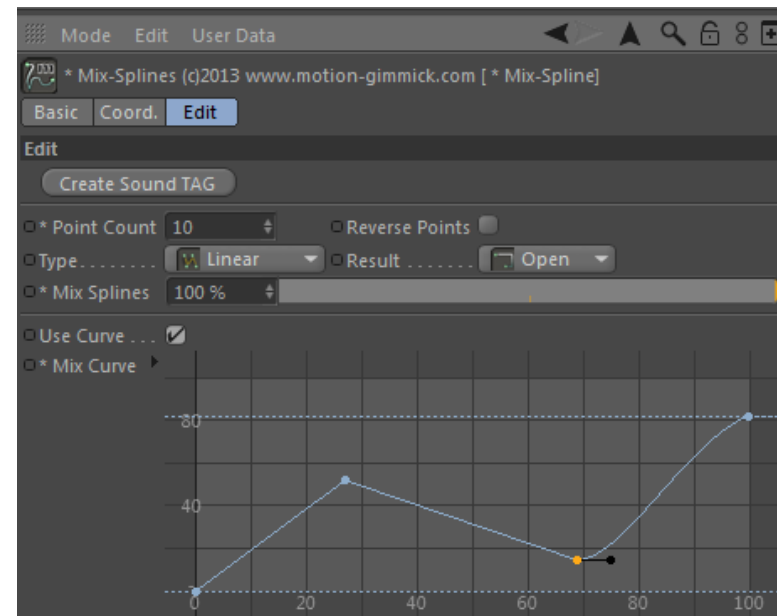
Tipp:
Do you want to close the mixed spline, use the close-function of **Grow-Spline** plug-in additional to **Mix-Splines.** Within **Grow-Splines** you can close the splines.

All **Spline-Time Pro** plug-ins are able to use multi splines like Text-Object in Cinema.

9.   Straight-Spline   **create bended spline**

When you start this tool a linear spline is generated with a preset length and position.

Like in any other of our spline tools here can be set the **Point Count** and **Type** (Linear, Akima...) .

Start is the start point of the spline in relation to the null point of the spline.

Changing **Start** and **End** in **Bending Tag** will move only this changed start- or endpoint not the whole spline.
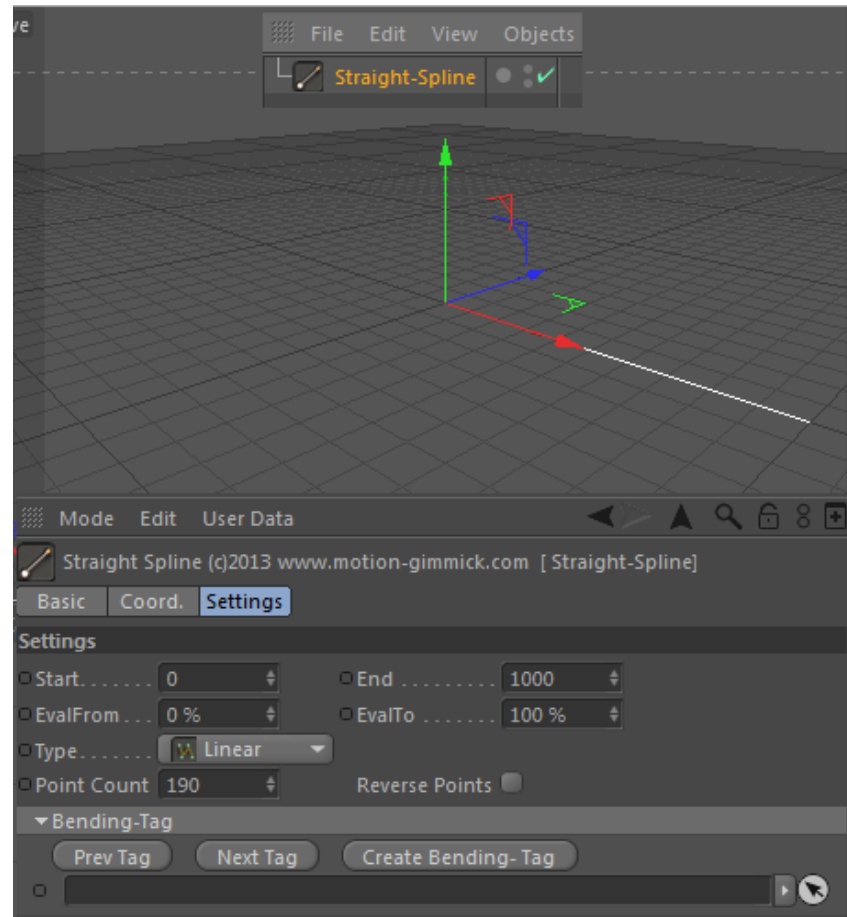
F.e.:
If you want to move the whole **Straight-Spline** to +100 metres in x-Axis, you have to change both parameters **Start** and **End** with +100.

Use **EvalFrom** and **EvalTo** to grow or shrink **Straight-Spline** in the defined length between **Start** and **End.**

Changing **Start** and **End**: **Bending-Tag** moves
Changing **EvalFrom** / **EvalTo**: **Bending-Tag** does not move.

10. Straight-Spline / Bending-TAG

In **Straight-Spline** menu at Attribute-Manager you will find **Create Bending-Tag**.
This is the only way to create this **Bending-TAG**.

With **Prev Tag** and **Next Tag** in this menu you can manage more than one Tag easily.
One **Straight-Spline** can have as much **Bending-Tags** you like or need.

Tipp: To handle more than one Tag on one **Straight-Spline**, please use the comment line to name the different Tags for a better overview.

I almost do not use more than 3 Tags behind one **Straight-Spline** but create more than one **Straight-Splines** and put them together with our **Connect-Splines** in **Spline-Time Pro**.

Bending Tag - Settings

Position: Absolute position on **Straight-Spline** length from **Start** to **End** (in Straight-Spline Menu Default **Start** 0 / End **1000**)
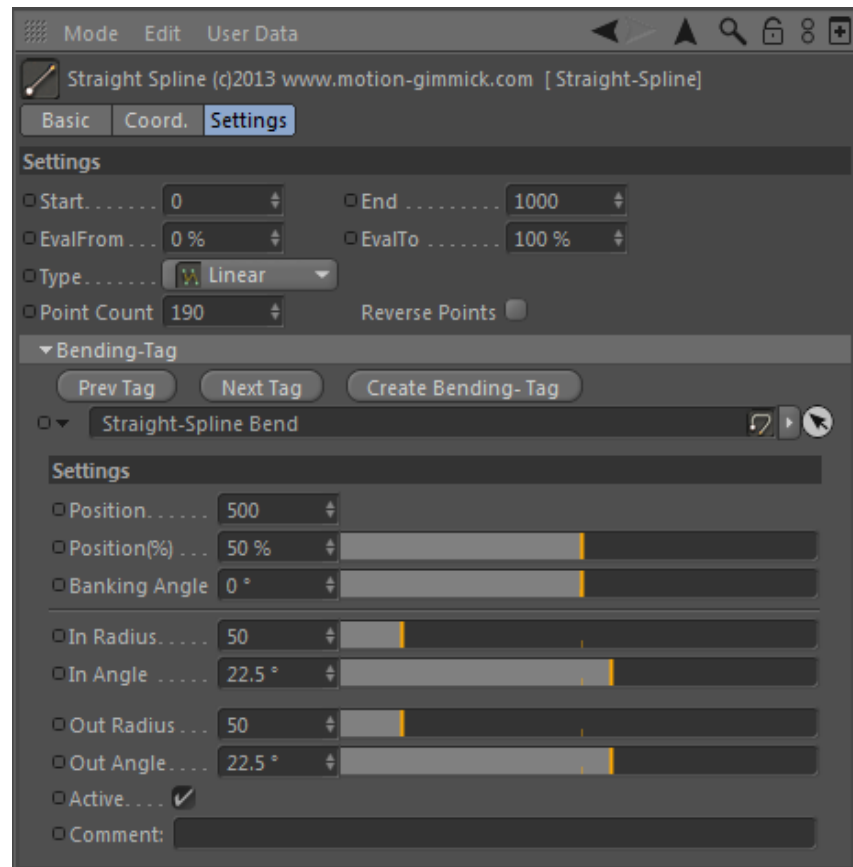
Every new **Bending-Tag** is created on Position 500.

This is in relationship to the spline length of 1000 a relative **Position(%)** of 50%.

(If you move the **End** of **Straight-Spline** to 800 - the absolute **Position** of the bending will be on 400 and the relative **Position(%)** is 50% again).

Prev Tag and **Next Tag** switch to next bend at next or previous position.

Banking Angle allows to rotate the whole bending in Z-Axis.

11. Straight-Spline / Bending-TAG

Example:

In Radius describes a circle incoming to the bending
(red marker in our example)

Out Radius describes a circle from the middle of the bending to the end.
(Yellow marker in our example)

In our example there was created a **Bending-Tag** on
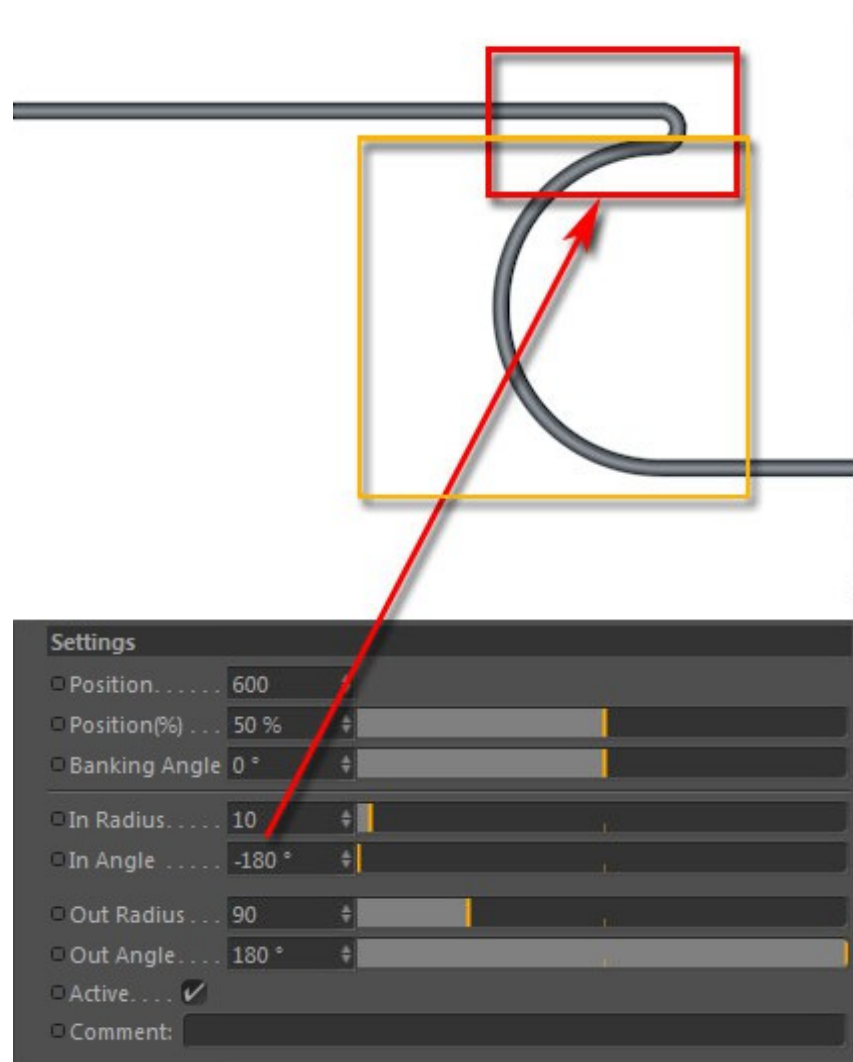
Position 600 with a spline length of 1200.

In-Radius: 10 and **Out Radius:** 90 /
Inangle: -180° and Out Angle: +180°.

In our example you will see: **In** and **Out Radius** can be very different.

Active: To deactivate one or all tags you can use this value in each
Bending-Tag.

12. Connect-Spline   connect any number of splines

Connect-Spline connects any number of splines (when sub objects to **Connect-Spline**) to one spline.

First spline in **Connect-Spline** hierarchy rules the position and angle of the result spline.

Second spline starts on the endpoint of the first spline.
Third spline starts on the endpoint of second spline
and.....so on....   Example 1:

The angle of each spline can be edited as usual.
For easier handling you can use null objects into the hierarchy.

Connect-Spline > Parent-Objects
Formula   > First spline
Text > Second spline

Point Count   > Number of points used in result spline

Start / End > Growing (shrinking) of result spline

Segmented Splines > result spline will be connected as a segmented spline / multi spline
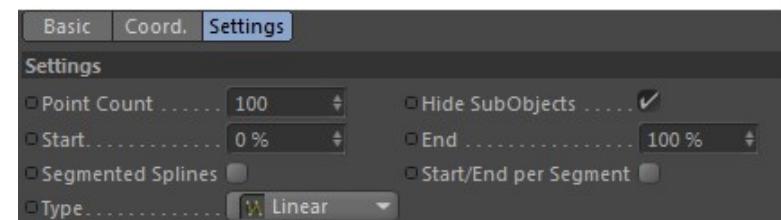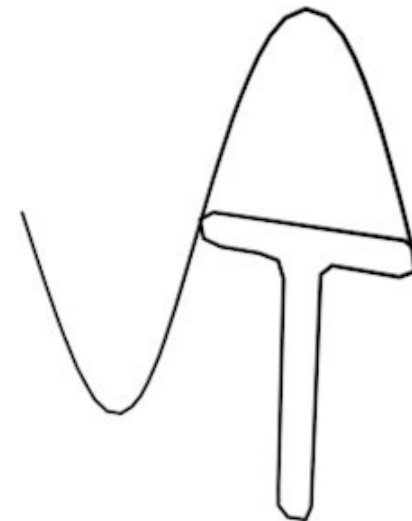
Start/End per Segment > if active each segment of result spline grows when in the same way **Segmented Spline** is active, too.

Hide SubObjects > if active - only result spline is visible in Editor and Renderer.

In Example1 **Segmented Splines** and **Start/End per Segment** are off.
Formula and T from Text-Object are one connected spline.

13. Connect-Spline

In the next step **Segmented Splines** is switched on and the result spline will be used as spline pieces in Sweep Nurbs, Loft Nurbs...

Start/ End in **Connect-Spline** grows or shrinks this result spline like one spline.

In the third step **Start/End per Segment** is switched on, too.
Now each spline segment in result spline will grow and shrink with **Start** and **End** in **Connected-Spline.**

Example 2:

In Example 2 > **End** is 80%.

Both spline segments > Formula and T are now each one ending on 80%.

Attention:

Connect-Splines uses only the first segment of input splines.
Only result-splines of **Connect-Spline** will be segmented.

Use **Branch-Spline** for segmented input splines.

17
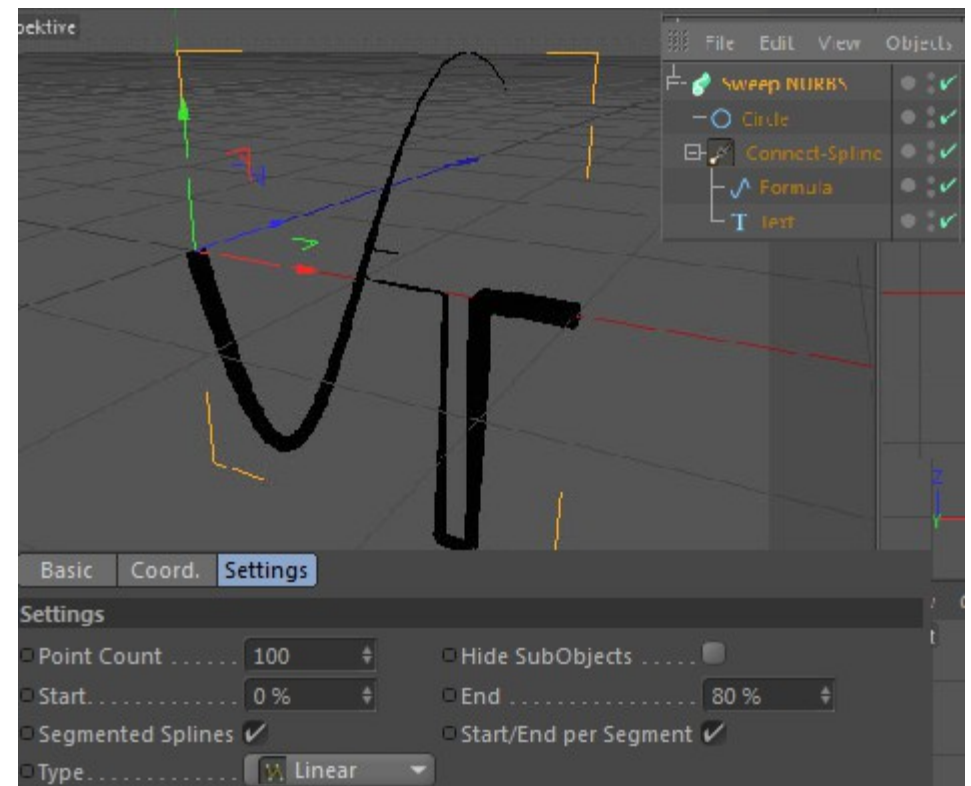
14. Branch-Spline   create branches from any spline on a centerspline.

Branch-Spline creates branches from any spline on a **Centerspline**.

Example 1
Take a look to a very simple **Branch-Spline** hierarchy**:**

Branch-Spline > Parent-Object
Centerspline (Formula) > Child-Object
Branch (Arc) > Linked with the **Branch-Tag** to the **Centerspline**

To link the arc (Example 1) to the **Centerspline** put the arc per Drag&Drop into the **Create/Edit TAG** link field of the **Branch-TAG.**

After that moment the arc is a branch of the formula.

Like in the other plug-ins of **Spline-Time Pro** you will be able to change the **Point Count** for the **Centerspline** in the **Branch-Spline** menu. The **Branch-Tag** has its own individual **Point Count** for each branch.

Create Centerspline activ > **Centerspline** is visible in renderer and editor.

Create Centerspline off > Only the branches are visible in renderer and editor.

Segments on/off > Is the **Centerspline** a segmented spline like Cinema Text Object, Hair Splines, Mospline or... so each segment gets a copy of the branch.
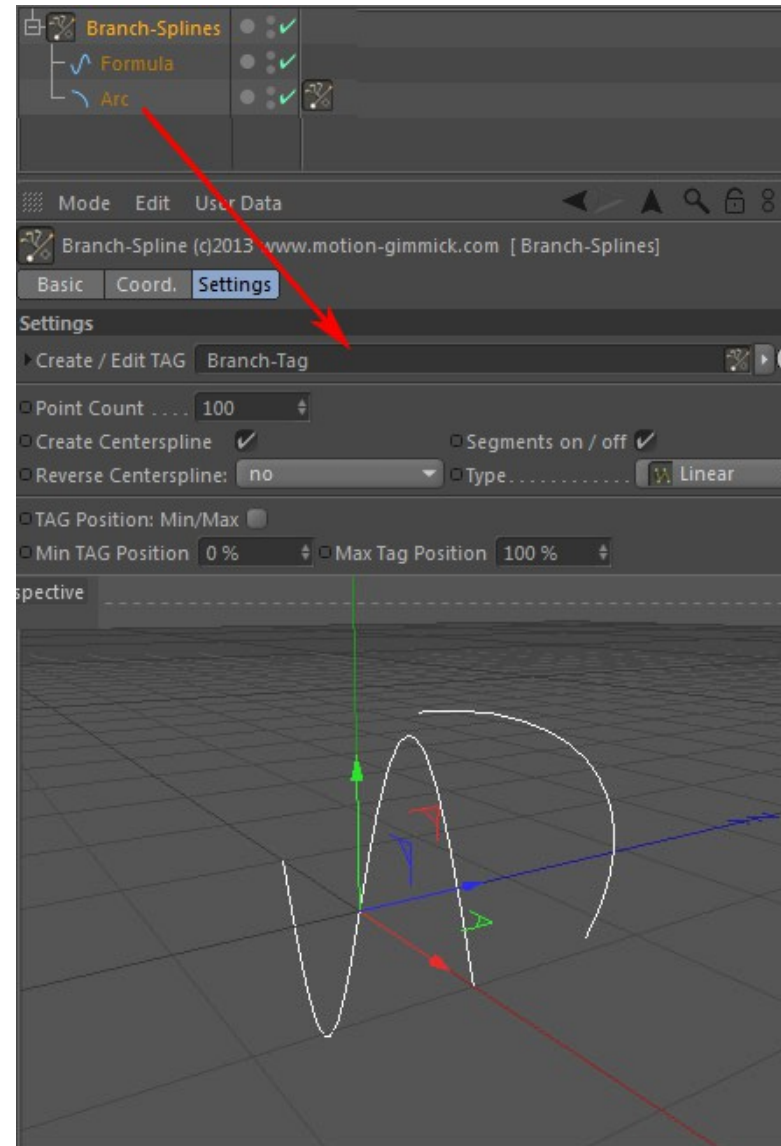
Reverse Centerspline > only **Centerspline** changes direction.

TAG Position: Min/Max > active area on **Centerspline** to position branches on /off

Tag Position Min/Max active area on **Centerspline** to position branches.

Example 1:

15. Branch-Spline / Branch-TAG

Point Count – this **Point Count** only works for the branch of this **Branch- TAG.**

Copies > create any number of branch copies radial to the **Centerspline**.

Aktive – switch Branch on/off

Position(%) - relative position on the active area of the **Centerspline**.

Active area – take a look to **TAG Position: Min/Max** in **Branch-Spline** menu:
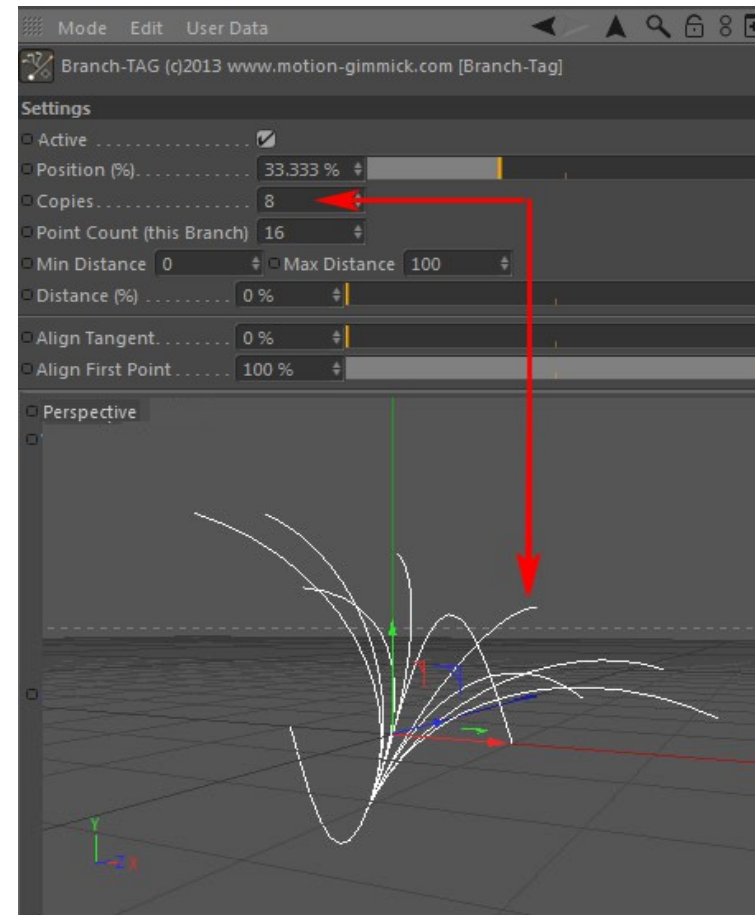
16. Branch-Spline / Branch-TAG

The Distribution Curve scatters the radial distribution of the branch copies:
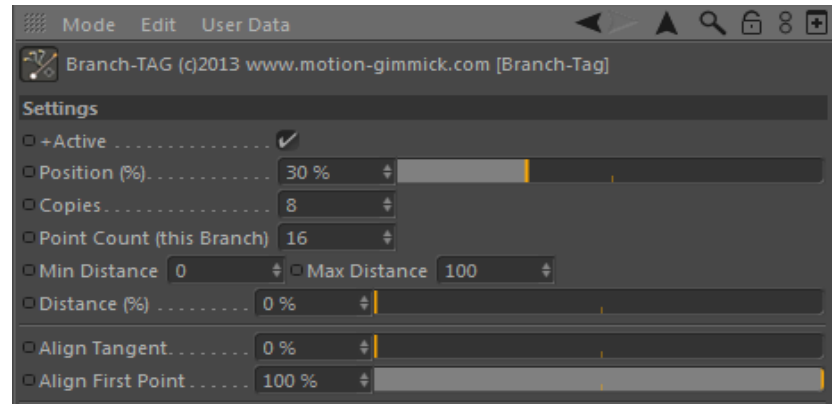
Min Distance and **Max Distance** describe a circle / radial area around the **Centerspline** – with **Distance(%)** you set the distance from branch to **Centerspline** in this maximal area.

Align Tangente > Correction parameters for the alignment of the branch splines

Align First Point > Correction parameters for the start point of the branch-spline.

Use **Comment** to handle your **Branch-TAGs** easier.

17. Object-Connect   **create splines between objects or / and Selection-TAGs**
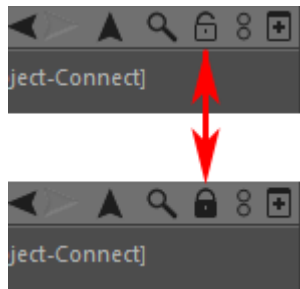
Object-Connect creates splines between objects or / and Selection-TAGs that are added into a List in **Object-Connect** menu (Attribute Manager).

Changing position of this objects will change the spline in real time.

Usage:
Mouse-click on **Object-Connect**

Lock the **Connect...** Frame:

Select all objects you will connect with a spline.
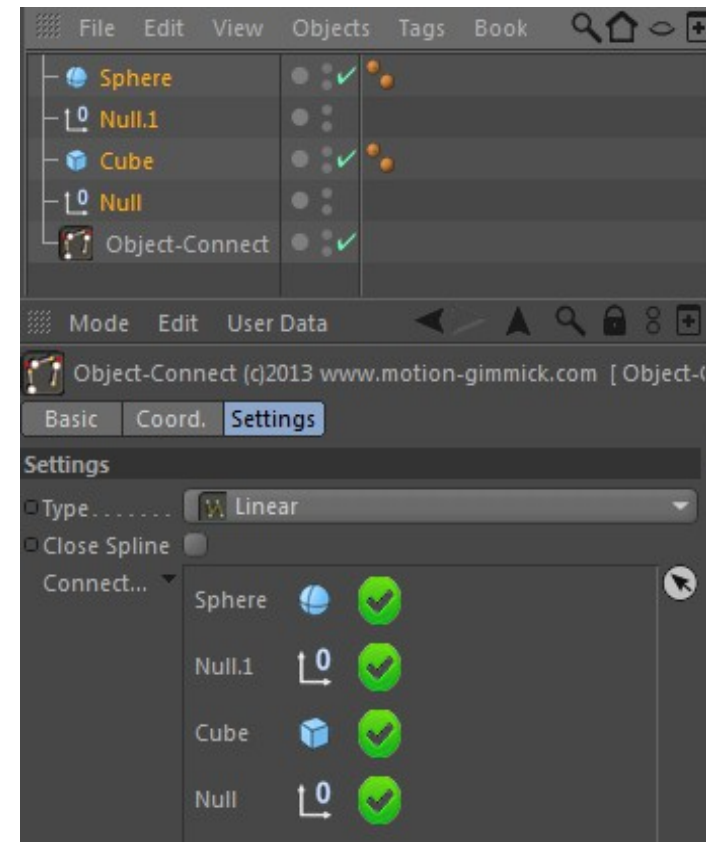
Unlock the **Connect...** Frame

Now use **Object-Connect** like any other spline in Cinema 4D or in tools of **Spline-Time Pro**:

F.e.:
- Change **Type** from **Linear** into Akima, Bezier....
or
- Close this spline
- animate connected objects with Dynamics
- extrude or loft **Object-Connect**
- build clones along **Object-Connect** with **Clone-This**
or …..

18. Spline2Helix / General   **handles a helix around any spline**

Create Sound-TAG
This button creates a **Sound-Tag** behind the **Spline2Helix** object. The menu of the **Spline2Helix** Sound-Tag contains all **Spline2Helix** object parameters marked with ***** .

The different values between identical parameters in object and tag (...like Point Count) are important for animation by sound.

We describe this feature later in detail.

Usage:

Spline2Helix > parent object
any spline as **Centerspline** > Child-Object

More turns / windings to the helix need more points in **Point Count.**

The count of turns is result of the value between **Start Windings** and **End Windings.**

Start Windings – position of start point on a circle (Setting: **Start Radius** in **Spline2Helix** menu ***Radius / Variation**) around the **Centerspline**.

End Windings – position of endpoint on a circle (Setting: **End Radius** in **Spline2Helix** menu ***Radius / Variation**) around the **Centerspline**.

Start Position – Helix start on this position of the **Centerspline**.
End Position – Helix ends to this position of the **Centerspline**.

You can hide or **Show Centerspline**.

Set the **Type** from **Linear** to **Akima**, **Bezier....**

Zero Winding - moves the windings along the **Centerspline**

Density
You may rule the Density of windings by **Use Curve**.

19. Spline2Helix / Placement

Placement:
This curve rules the values between **Start Position** and **End Position** by **Placement Curve.**
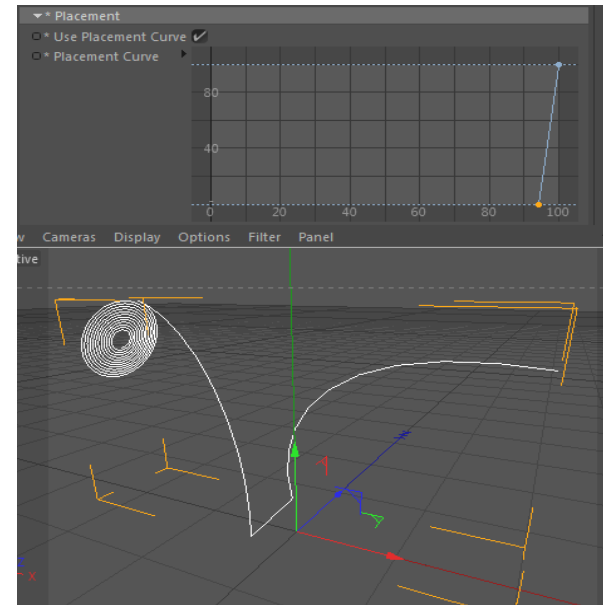
20. Spline2Helix / Radius

Radius / Variation:

Start Radius > max. value of the start radius for **Spline2Helix**
End Radius > max. value of the end radius for **Spline2Helix**

Use Curve will activate the **Radius Curve.** This curve rules the values
of **Start / End Radius** along **Centerspline**.

Spline2Helix creates a helix to all segments of a spline.
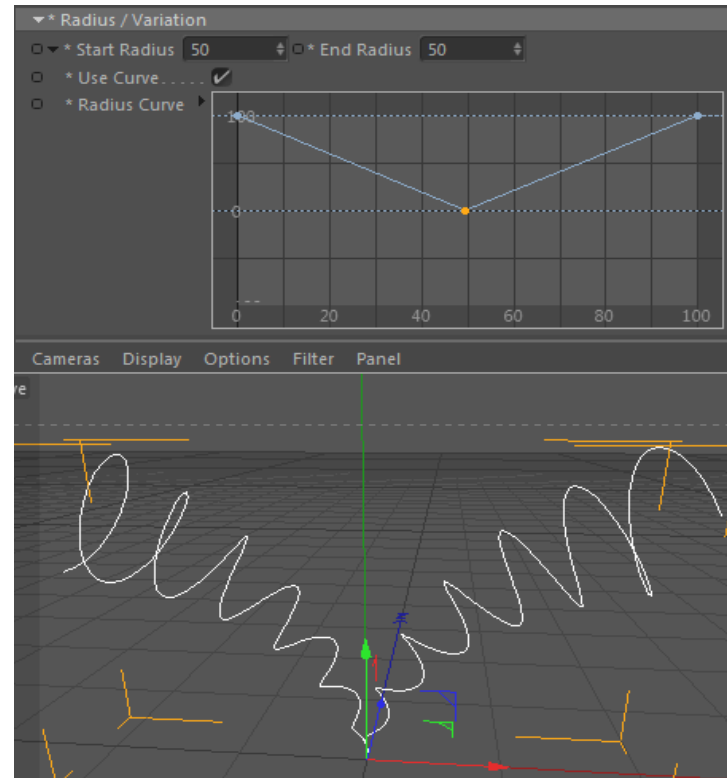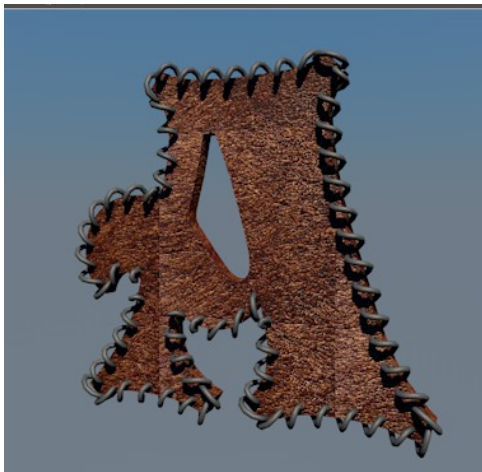
21. Poly-Spline / General

create splines or polygon-object

Poly-Spline creates

1. Polygon Object
2. Connection splines in v - direction
3. Connection splines in u - direction
4. Crossed splines in both directions

using any source splines.

Usage:

Poly-Spline > Parent-Object
any number of source splines > Child-Object
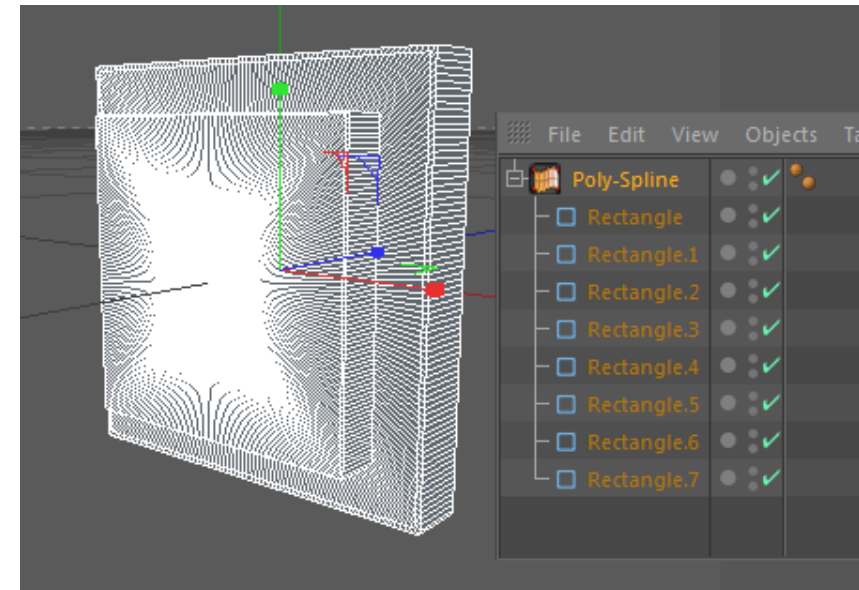
Wrapped Splines created in seconds with **Poly-Spline:**
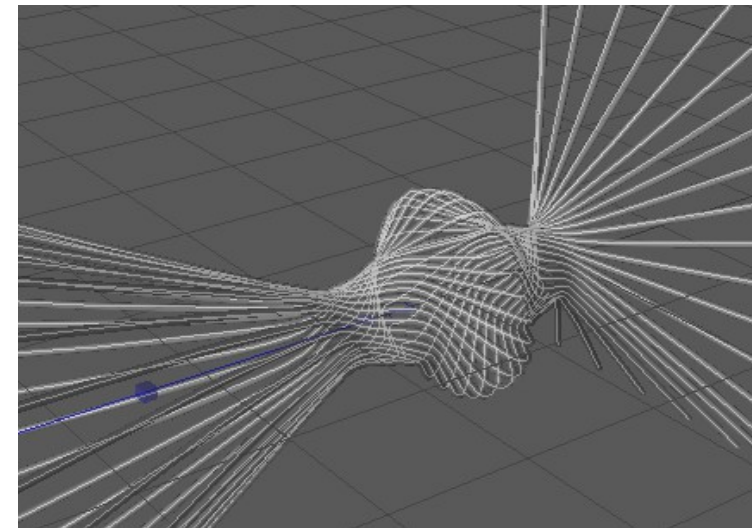
22. Poly-Spline / U-Splines

U-Splines:
In the following example we used some different source splines as Sub Objects to **Poly-Spline:**
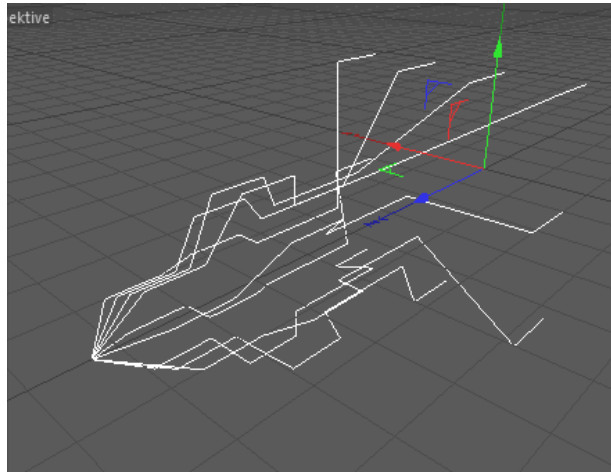
Return-Splines: U-Splines
creates connection splines in u-direction.

U-Count > Number of connection-splines
(minus 1 – it is needed for the **Close U-Splines**-function)

V-Spline Count > Number of Points on the source-splines that will be considered.

U-Density/Distribution:
Force Vertices > will use the exact source spline-form
Ignore Vertices/ Curve Distribution > distribution of connection spline will be rules by user curve. (needs more Spline-Count to get the exact form > nice feature: you can animate it!)

Create > The output is **List of Splines**, **Multisplines** or **Polygonobject**

You may change the **Type** from **Linear** to **Akima** or....
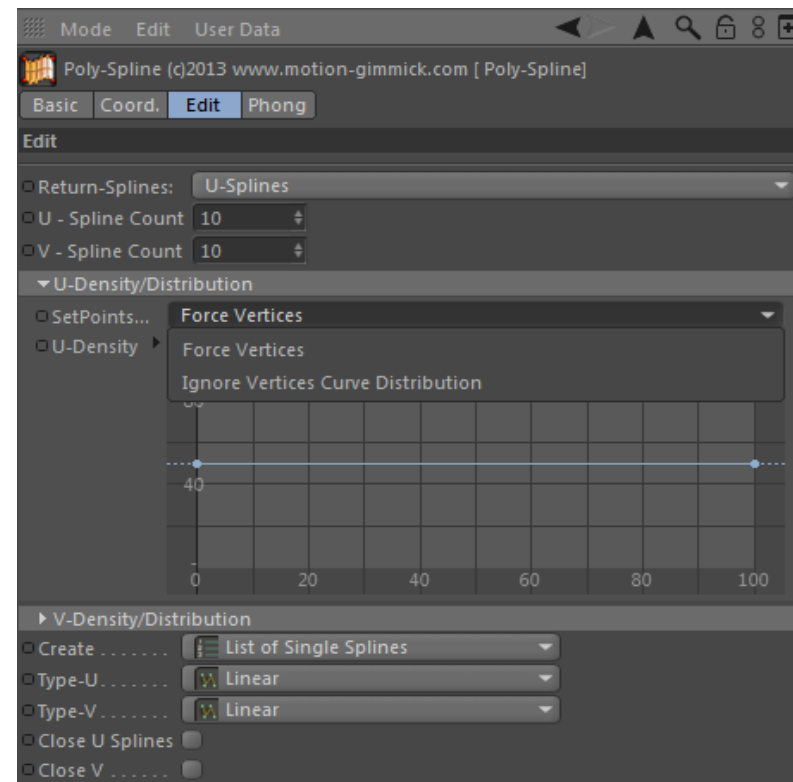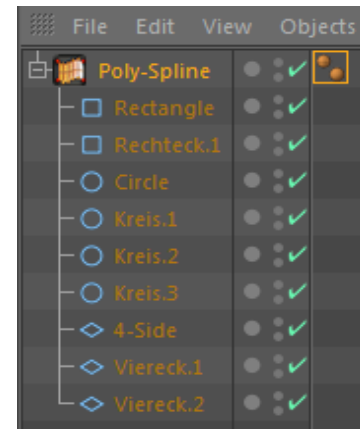
23. Poly-Spline / V-Splines

V-Splines:
In the following example we used some different source splines as sub objects to **Poly-Spline:**
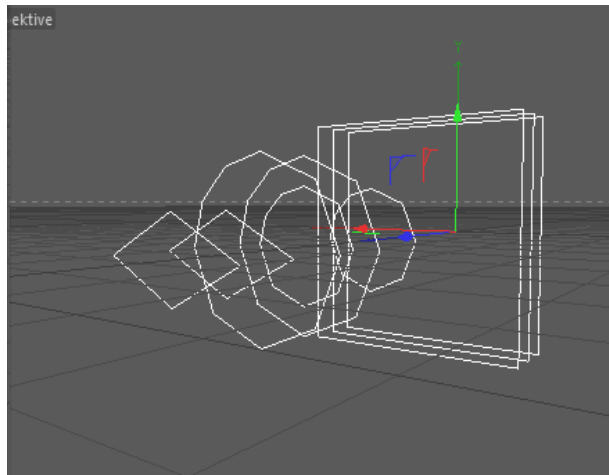
Return-Splines: V-Splines
creates connection splines in v-direction.

V-Count > Number of connection-splines
(minus 1 – it is needed for the **Close V-Splines** function)

U-Spline Count > Number of Points on the source splines that will be considered.

V-Density/Distribution:
Force Vertices > will use the exact source spline form
Ignore Vertices/ Curve Distribution > distribution of connection spline will be rules by user curve. (needs more Spline-Count to get the exact form > nice feature: you can animate it!)

Create > The output is **List of Splines** or **Multisplines**

You may change the **Type** from **Linear** to **Akima** or....

27
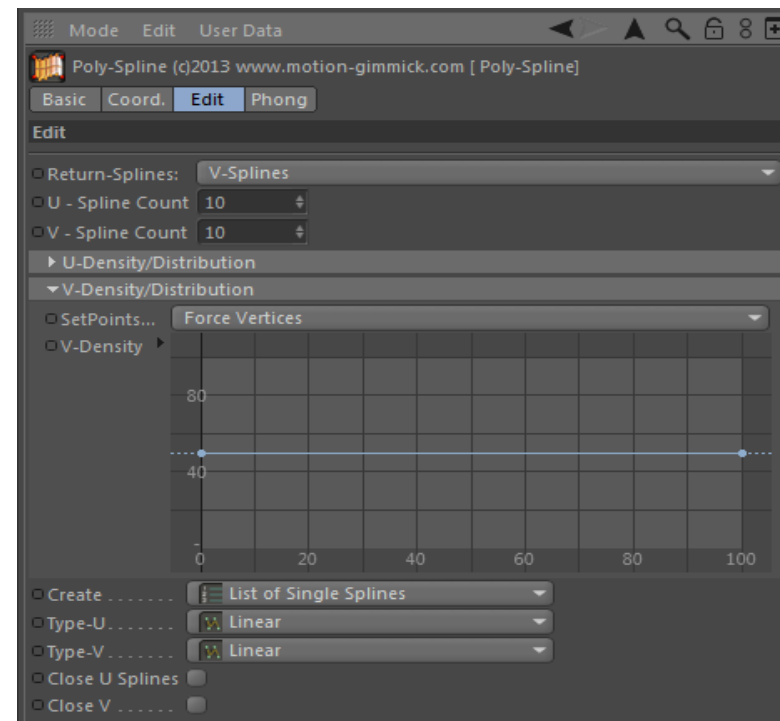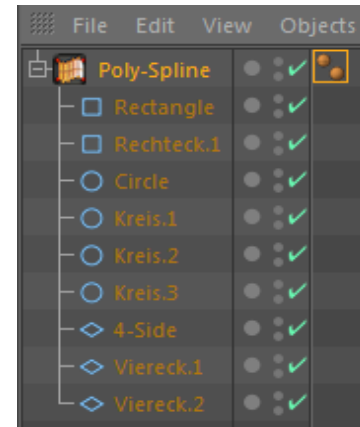
24. Poly-Spline / U+V Splines

U+V-Splines:
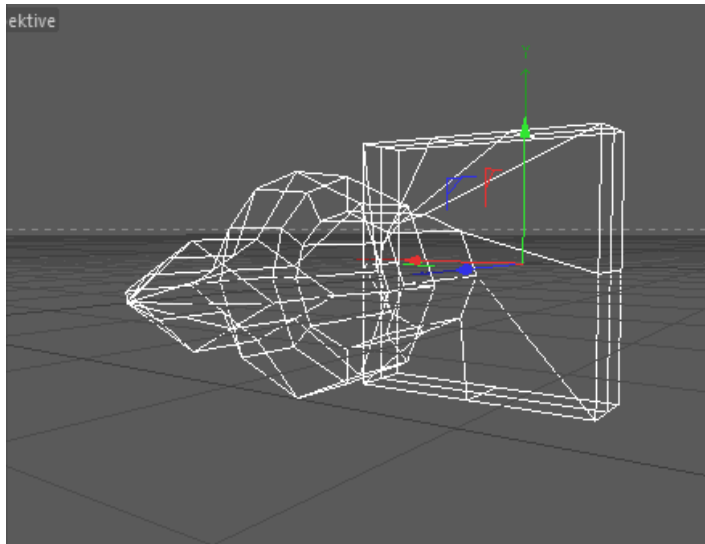
Return-Splines: V-Splines
creates connection splines in u+v-direction.

U-Count > Number of connection splines
(minus 1 – it is needed for the **Close V-Splines** function)

V-Count > Number of connection-splines
(minus 1 – it is needed for the **Close V-Splines** function)

U-Density/Distribution:
Force Vertices > will use the exact source spline form
Ignore Vertices/ Curve Distribution > distribution of connection spline
will be rules by user curve. (needs more Spline-Count to get the exact
form > nice feature: you can animate it!)

V-Density/Distribution:
Force Vertices > will use the exact source spline form
Ignore Vertices/ Curve Distribution > distribution of connection spline
will be rules by user curve. (needs more Spline-Count to get the exact
form > nice feature: you can animate it!)
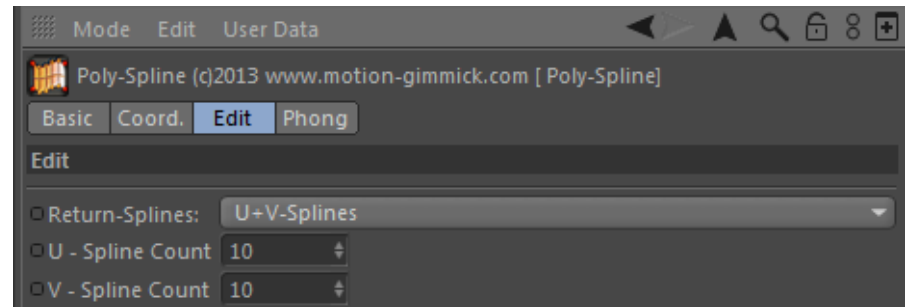
Create > The output is **List of Splines** or **Multisplines**

You may change the **Type** from **Linear** to **Akima** or....

25. Clone-This / General Settings   create clones, instances or renderinstances along spline

Create Sound-TAG
This Button creates a **Sound-Tag** behind the **Clone-This Object**. The menu of the **Clone-This** Sound-Tag contains all **Clone-This Object** parameters marked with ***** .

The different values between identical parameters in object and tag (...like Point Count) are important for animation by sound.

We describe this feature later in detail.

___

Clone-This creates Clones, Instances or Render Instances from Objects, Splines, Lights and Light-Effects along splines

Use any spline or spline-object also multi splines (segmented splines like Hair or Mo-Spline) or Instances of splines for path-splines.
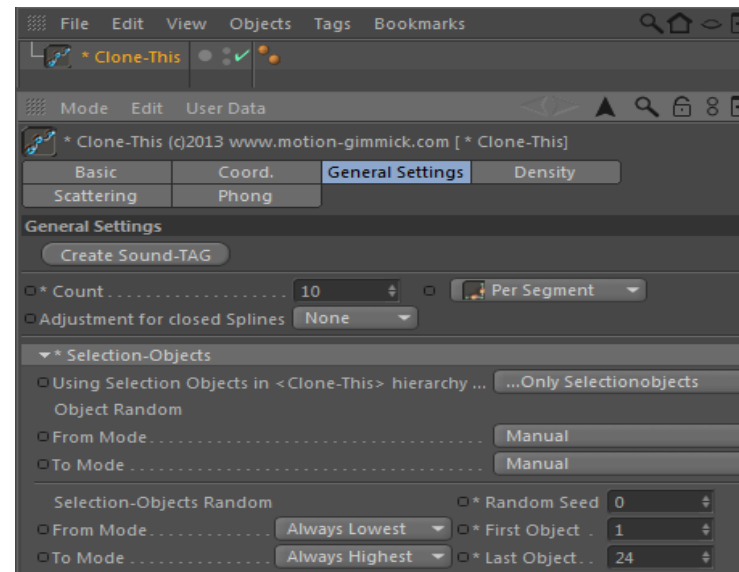
You can put any number of different objects in the hierarchy of **Clone-This** and / or you can use Cinema Selection Object List for clones.
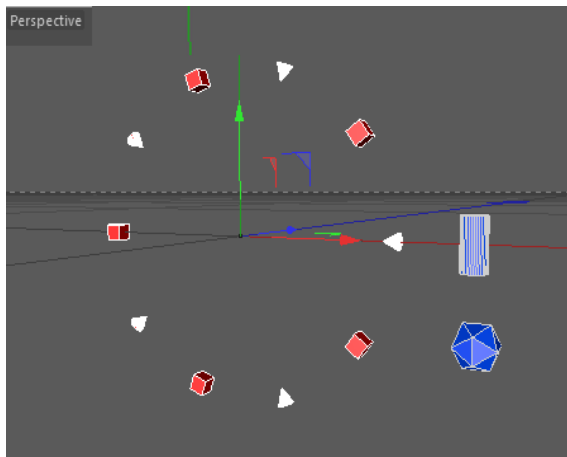
Red: Objects out of a Selection Object List (Cinema-Tool)
Blue: other objects

Default ***First Object** „Object 1 in hierarchy" und als ***Last Object** „2".
If you use more than 2 Objects in your hierarchy change this value. (In this example we used a value of max 24 Objects in hierarchy of **Clone-This:**

In this example we choose ...**Only Selectionobjects** and **Manual Random** – means all objects in list will randomly cloned.
So the blue objects in the left picture are not cloned.
They are not in a Selection Object List.

Is there no Selection Object in **Clone-This** hierarchy the **Clone-This** clones all other objects.

26. Clone-This / General Settings

Usage:

Clone-This > Parent-Object
any spline > 1. Child-Object = **Centerspline**
any number of objects > 2....Child-Objects

Count
Number of object copies along

Each spline segment > **Per Segment**
or
Whole Spline

Adjustment for closed Splines > this parameter deletes the first or last copy on a closed spline.

Particle Mode > Clones / Instances / Render -Instances
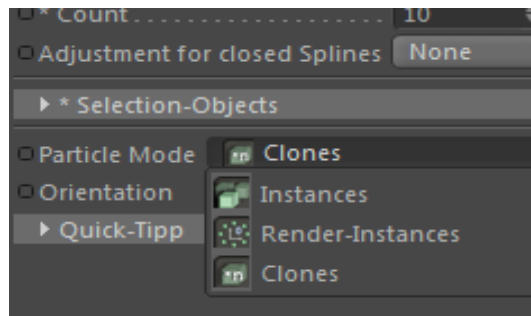
Render-Instances will make easier to handle much object-copies.
But if you use variations ruled by **Multi-Tween** it is necessary to use clones.

Orientation

The object alignment / orientation will be
as is (**Object**) or **Tangential** along spline.
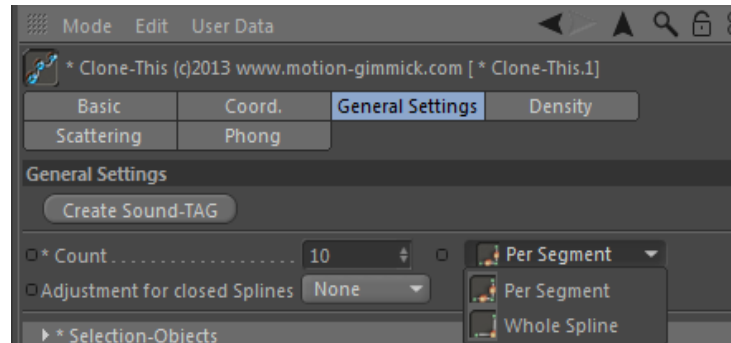
-->
*Attention: Before you change you setting from **Whole Spline** to **Per Segment**, make sure that your **Count** is not to high when using clones instead of Renderinstances.*

*f. e. 1000 Clones on a whole spline will work – 1000 Clones on a spline with 1000 segments (like hair spline) will **slowdown** your computer !!!!*

Some features need clones instead of Instances or renderinstances > be careful with your Count
<--
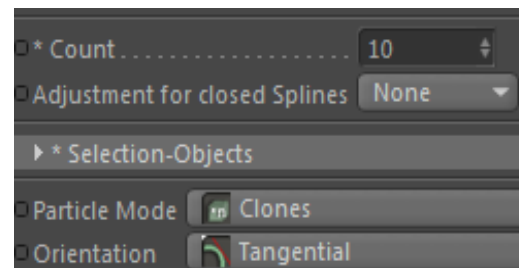
27. Clone-This / Density

Density:

Mode > Choose between 2 options: **Systematic** (uniform distribution) or **Random** density

For **Random** you can set the **Random Seed**

or rule Density by **Density Curve**

Density Curve:
In **Screen 1** the curve begins with the first Clone on the first point of our **Centerspline**. The curve ends on the last point of our **Centerspline** and the last clone of our clone **Count**. The density is **Systematic.**
All clones are distributed using the same distance.

Screen 1

In **Screen 2** the first clones are distributed in same distance until the middle of the **Density Curve** (= **Centerspline**).
Than at the last 50% of the spline length the most clones of the count are distributed with low distance.

Offset > moves all clones along the spline
Offset per Second > moves all clones automatically along the spline – value rules the speed.
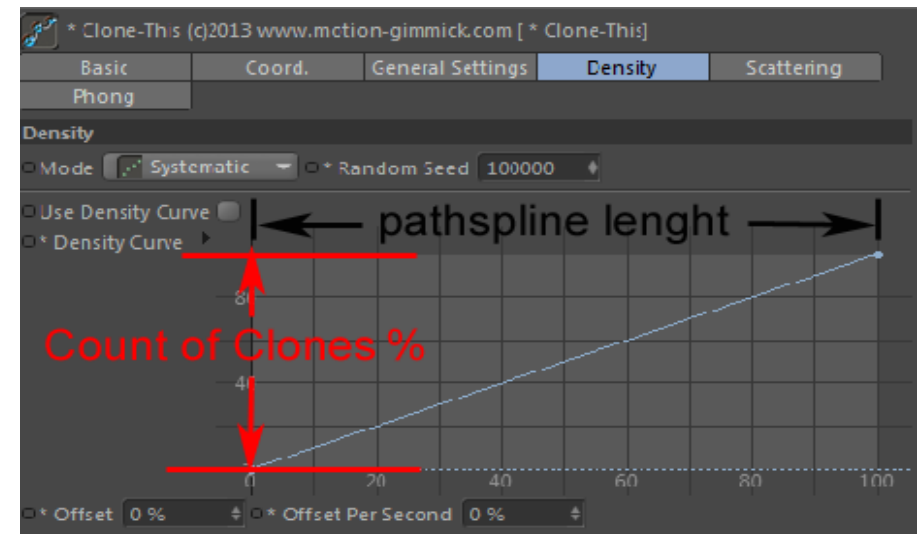
Screen 2
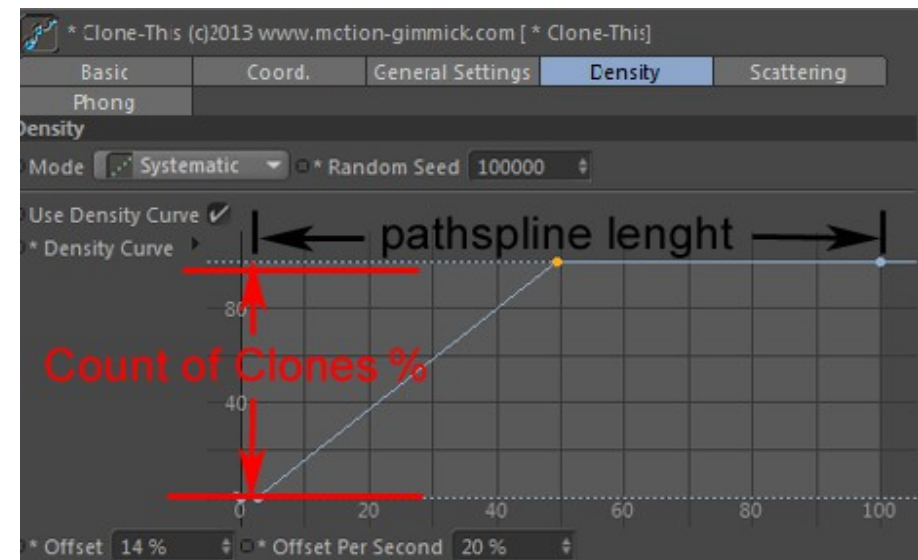
28. Clone-This / Mask clones

Mask Curve:

With this **Mask Curve** you are able to hide or unhide clones on the **Centerspline**.

The curve measure work from 0 up to 100 % for the **Centerspline** length and from 0 up to 100 % count of clones (Y-Axis in the curve graphic).

In **Screen 3** the curve setting results: All clones in the middle of the **Centerspline** are masked / not visible for renderer or editor.

Screen 4:
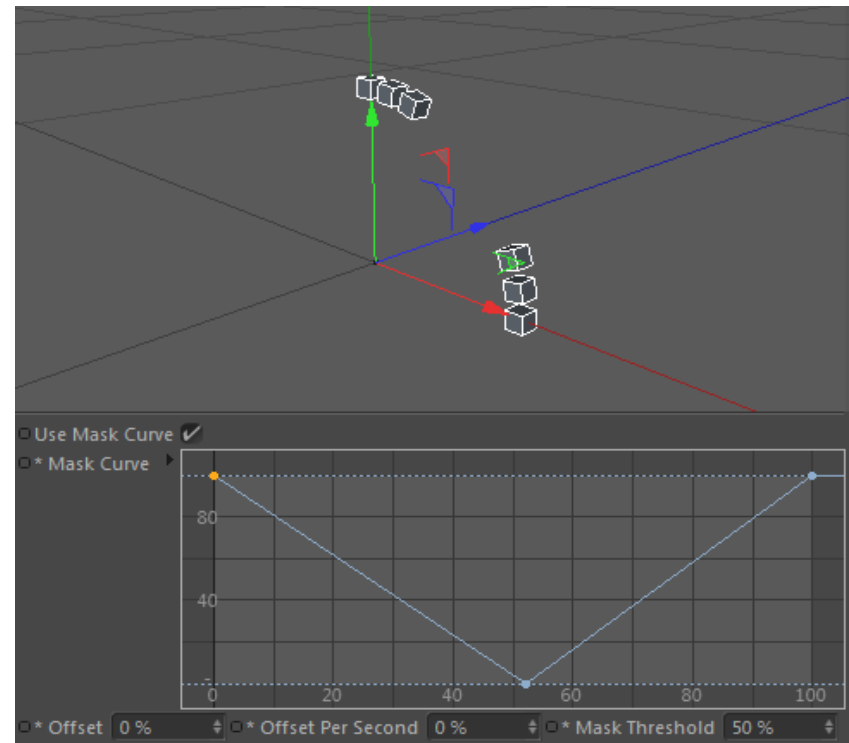
The curve shows a more exact area for masked clones.

Offset moves the masked area forward or backward.
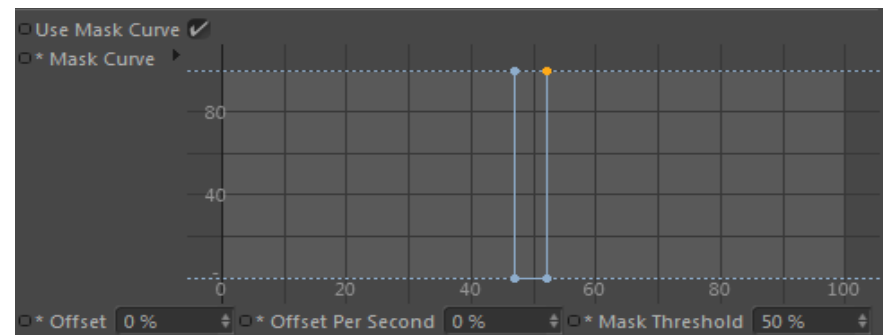
Offset Per Second moves the masked area automatically along the spline – value rules the speed.

Mask Threshold > Tolerance of the masked area

Screen 3:

Screen 4:

29. Clone-This / Rail Spline

Scattering
Scatter clones along **Centerspline** by using different radial distances from spline to each clone.

Use-Rail Spline
Use another spline for **Rail Spline** or attractor to rule the alignment.

Rotation by 1. Spline:
If you move the **Rail Spline** the clones rotate around the **Centerspline**. (**Centerspline** is the **1. Spline** in **Clone-This** hierarchy in Object-Manager.)

Quick&Dirty Length: (fast)
The position of the clones is post adjusted according to an approximate length of the **Rail-Spline**

Exact Length: (slow)
The position of the clones is post adjusted according to the exact length of the **Rail-Spline**

Radial Scattering:
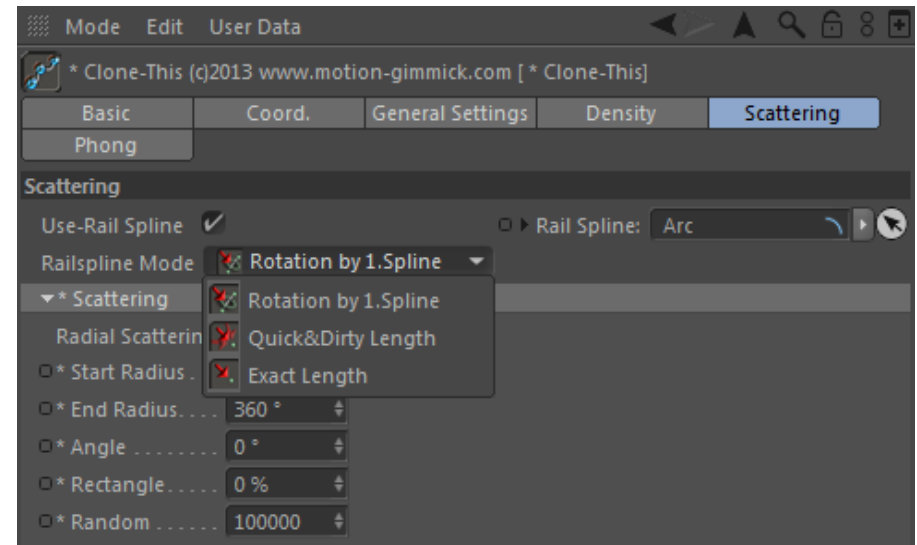
Radial:
Scatter clones objects along **Centerspline** by using different radial distances from spline to each clone with tangential alignment of the clones.
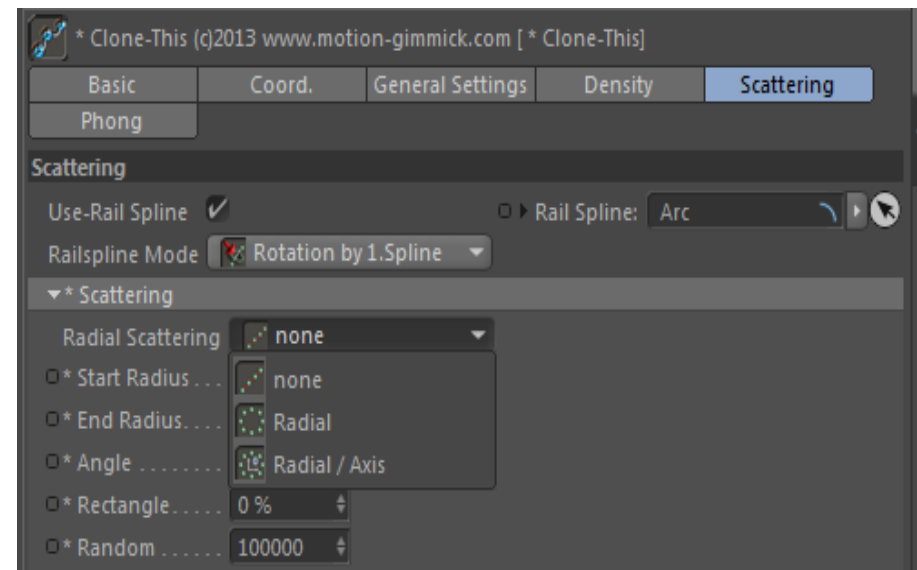
Radial Axis:
Scattering clones using **Rail Spline** for alignment.

Screen 5:

Screen 6:

30. Clone-This / Radius

Start Radius / End Radius

Default setting clones the object from **Start Radius** 0° up to **End Radius** 360° around the **Centerspline**.

Restrict this radial area by using less than 360°.
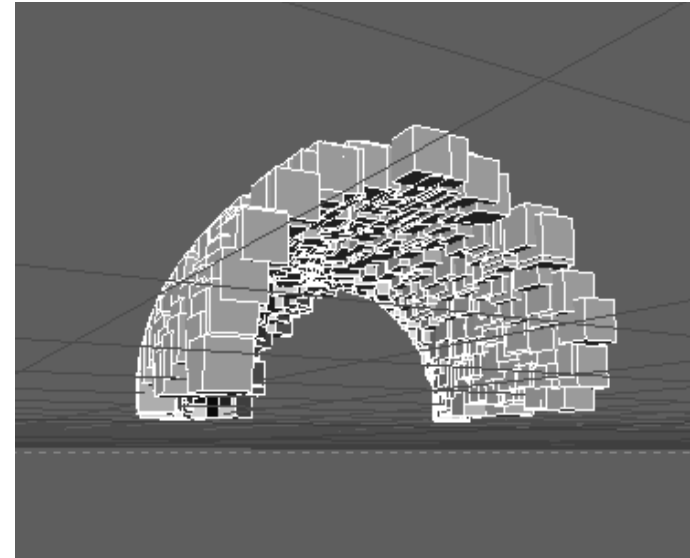
Angle
Rotate radial area around **Centerspline**.

Start Radius: 0 / **End Radius:** 180°:
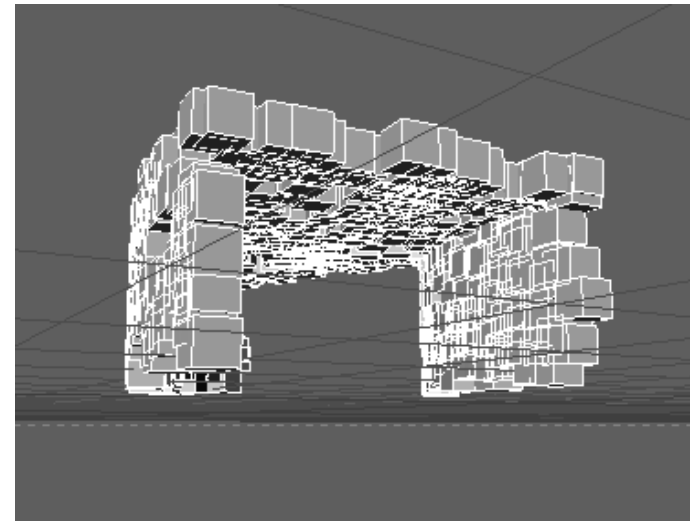
Rectangle: ….100%

Rectangle
If you need square distribution instead of radial > just use this parameter:

31. Clone-This / Scattering XY
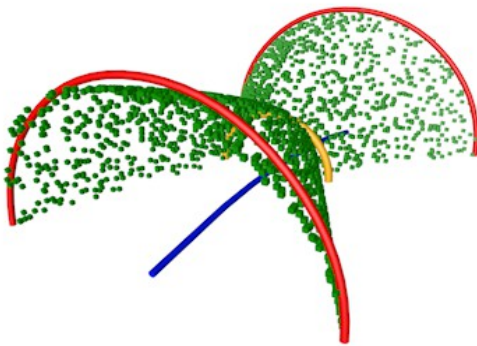
Scattering X / Scattering Y
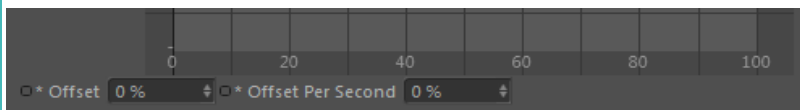
You determine how big is the **Radius** of the **Scattering** with values for each axis: **Radius Y** and **Radius X**.

The curve plays with the values between
0% = no scattering and
100% = max. scattering
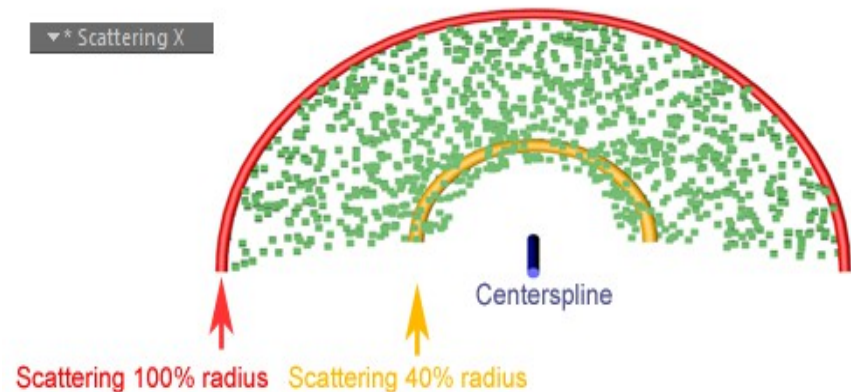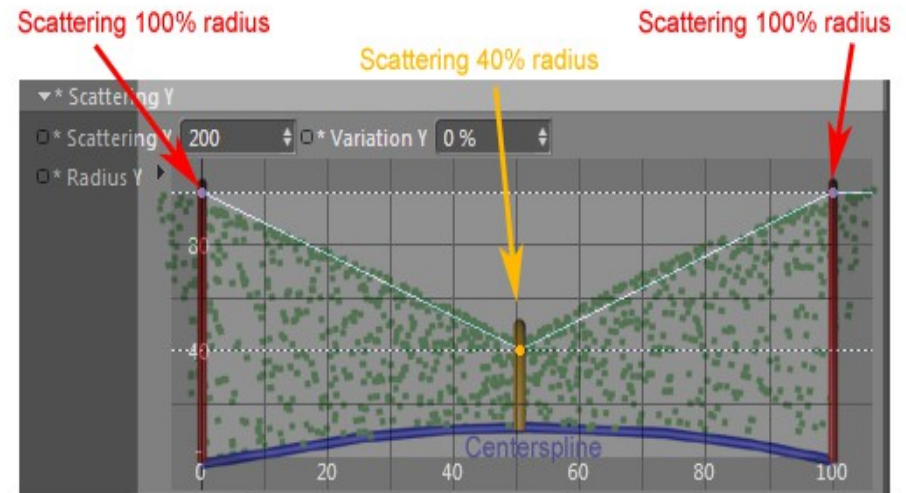
Variation X / Y > Random scattering = tolerance by using min. and max. radius for scattering

Offset moves min. / max. radius along the **Centerspline** forward or backward.

Offset Per Second moves min. / max. radius automatically along the spline – value rules the speed.

32. Multi-Tween / Tweener   morph or switch from object to object

Create Sound-TAG
This button creates a **Sound-Tag** behind the **Multi-Tween** Object. The menu of the **Multi-Tween** Sound-Tag contains all **Multi-Tween** Object parameters marked with ***** .

The different values between identical parameters in object and tag (...like Point Count) are important for animation by sound.

We describe this feature later in detail.

Example Tweening: Light-Effects

Clone-This only can switch from object to object.

Multi-Tween blends / morphs > tweens from object to object.

Multi-Tween works standalone or in enhancement to **Clone-This**.

Multi-Tween is not able to tween:
Deformer
Camera
Particle-Emitter
Particle-Geometry
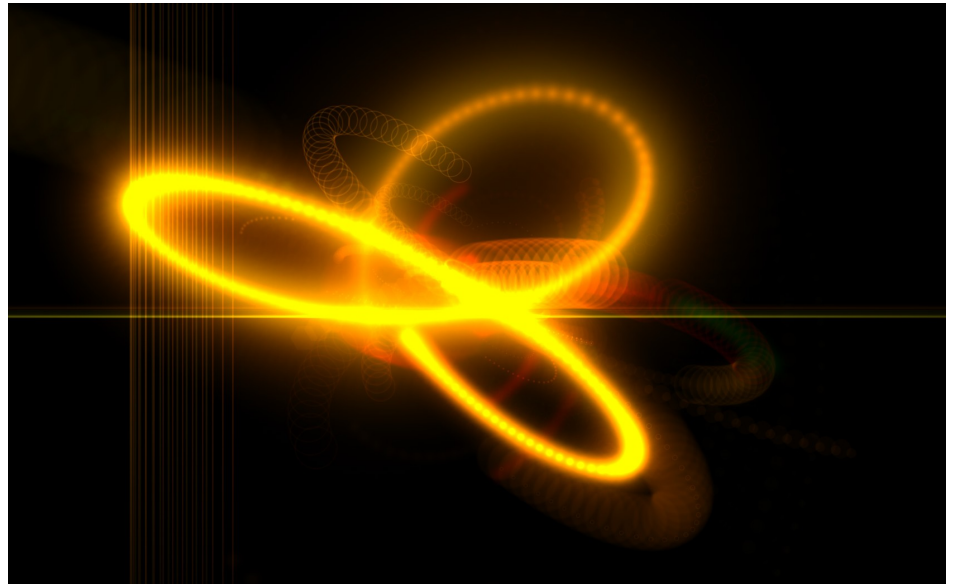
Multi-Tween works on:
Parametric Objects
Polygon Objects
Lights
Light-Effects (Lensflare and Glow)
Splines

all parameters that are available in
Attribute Manager and Coordinate Manager
Position
Scaling
Rotation (max. 180°)
...

33. Multi-Tween (Standalone)

Usage 1 :

Multi-Tween > Parent-Object
any object > 1. Child-Object
any object > 2. Child-Object

Result: Tweening between 1. and 2. Child-Object

Parameter Is > Along **Document-Time** (automatic animation)
or
Manual Parameters (animation by keys)
or
Curve (animation by keys)

Loop:
- Go to the first frame of your animation: f.e. Frame 0...
- Use the mouse click on the left „**Now**"-Button
- Go to the last frame of <our animation: f.e.Frame 50...
- Use the mouse click on the right „**Now**"-Button
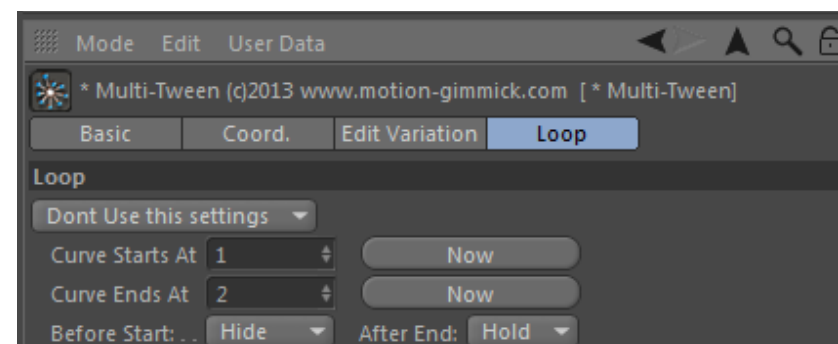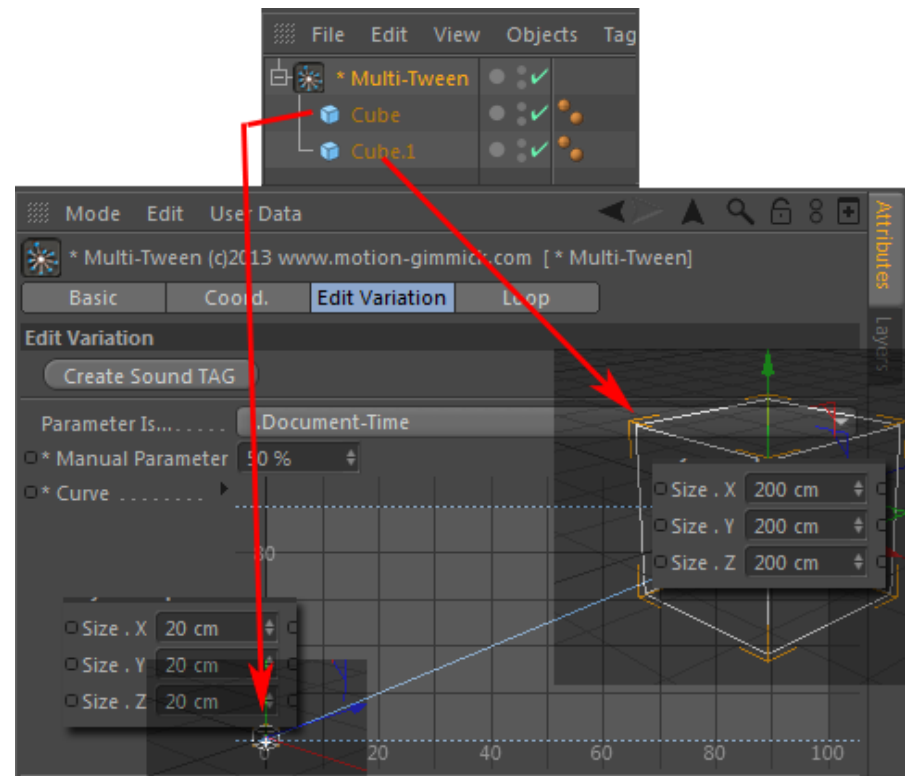
Now the tween works from first object   to last object in **Multi-Tween** hierarchy > Frame 0 and Frame 50
Once
Periodic or
Ping Pong

If you want to an object to stay longer – duplicate it in object hierarchy.

37

34. Multi-Tween (+ Clone-This)
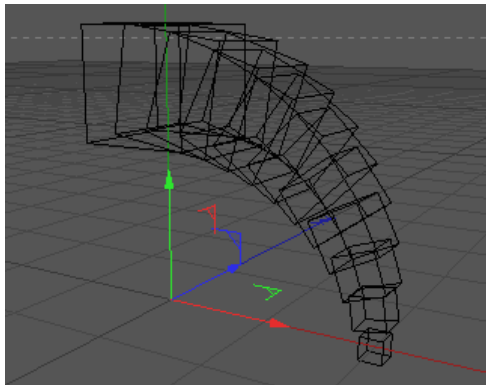
Usage 2 :

Clone-This > Parent-Object
   Spline > 1. Child-Object of **Clone-This**
   Multi-Tween > 2. Child-Object of **Clone-This** and Parent-Object of
      any object > 1. Child-Object
      any object > 2. Child-Object

Screen 1:

Result: Tweening from first to last clone along spline
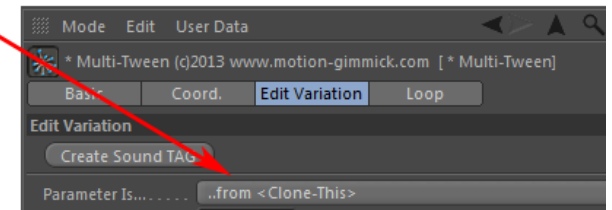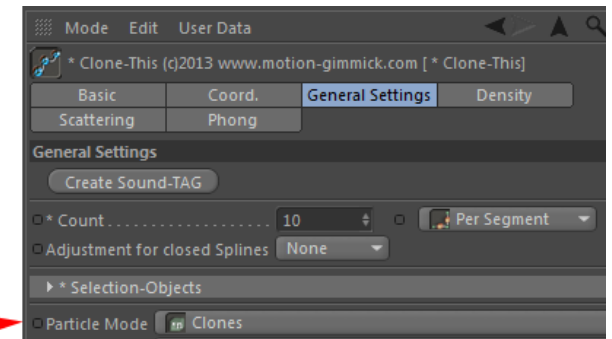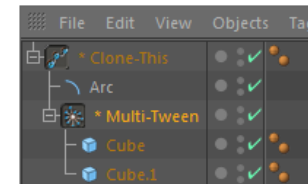
Screen 2:

Now change some default settings in
Clone-This and in **Multi-Tween**
before you get the result like in Screen 1.

Multi-Tween is not able to tween **Render-Instances** or **Instances**:
Change setting to **Clones** in **Clone-This** menu.

Multi-Tween tweens along Document-Time by default:
Change setting to **...from <Clone-This>** in **Multi-Tween** menu

Screen 2:

35. Motion2Spline / Tracking-Window   Create spline from animated objects

Motion2Spline is a plug-in but no plug-in object.
You do not find it in Object-Manager and you can not stack to other plug-ins.

In difference to our other plug-ins **Motion2Spline** is a dialog window.

You open it while you need it. After using it – you close the dialog.
When you start **Motion2Spline** you will see a **Tracking Window**.

In this Tracking-Window you see all link fields for objects link fields and parameters you need to track splines from animated objects or particles. Put the objects you need per drag&drop into the corresponding link field.

The link fields are
Animated Object/Emitter
Target Object
Generator Object (Parent)
Dummy (Child)
Repeat Object (optional)

Animated Object/Emitter:
This is the link field for the animated source object /Emitter or Particle-Geometry.

Mode:

Only Parent Object
A spline is generated exclusively by the parent object. Is the Emitter animated you get one spline for this animation.
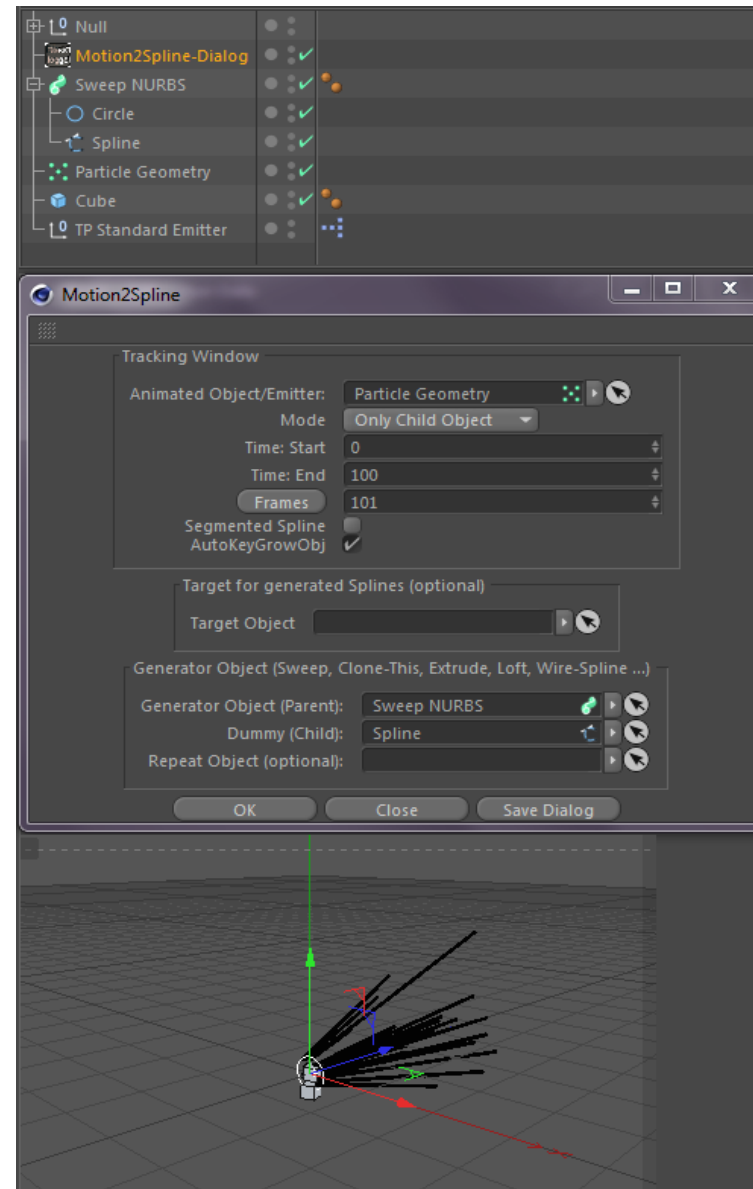
Only Child Object
Each child object creates a spline.

All Objects
Creates spline by each animated object in hierarchy.
Also particles need this value to create splines.

36. Motion2Spline / Frames

Time: Start
Creating splines is starting at this frame.

Time: End
End of Tracking. Default Time is document time. You can change this value manually.

Frames
Motion2Spline creates 1 spline point per frame.

Default each object creates one spline.
If you activate **Segmented Splines** the result will be one segmented Spline (multi spline) for all objects in the hierarchy.

Auto-Key
Producing a Grow-Object with keys for every animated object / spline.

Target Object
This object is the target (parent object) for all splines.
Motion2Spline places all splines incl. their **Generator Objects** under this parent object.

Generator Object (Parent)
Sweep Nurbs, Extrude Nurbs
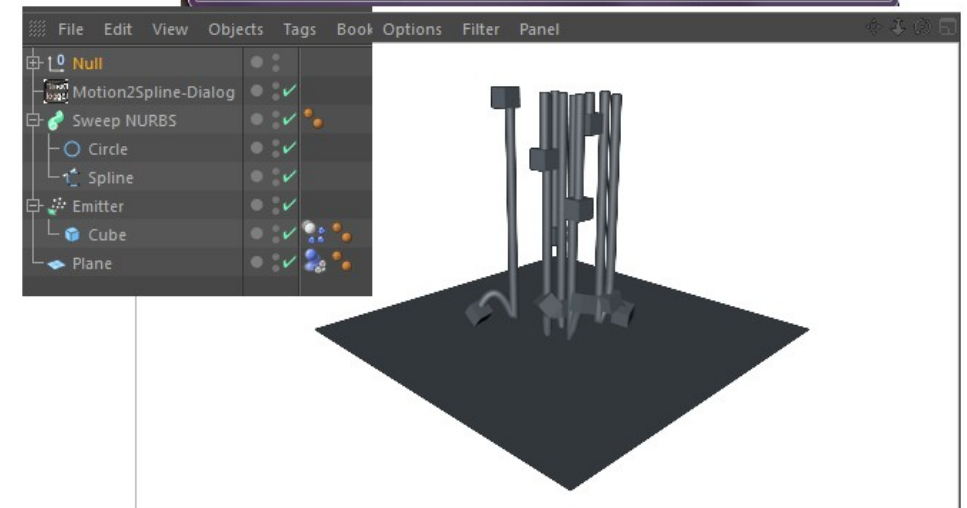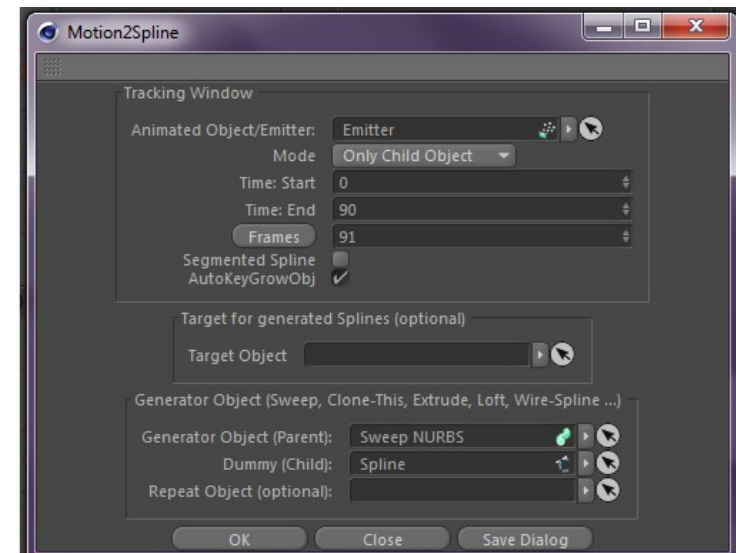
Dummy (Child)
empty spline or Null Object (using the OK-Button changes this object /spline into the tracking spline.

Repeat Object:
The object you put into this link field will be repeated with each spline you create while using the OK-Button. (Sweep or Extrude Nurbs)

Motion2Spline > baking Dynamics animation with splines:

37. Motion2Spline / Save Dialog

If you close this dialog this will empty all Link-Frames in **Motion2Spline**.

If you want to archive this dialog like a preset use **Save Dialog** in **Motion2Spline.**

Saving this dialog creates a new object in Object-Manager that contains all links you need for the next time you want to use it.
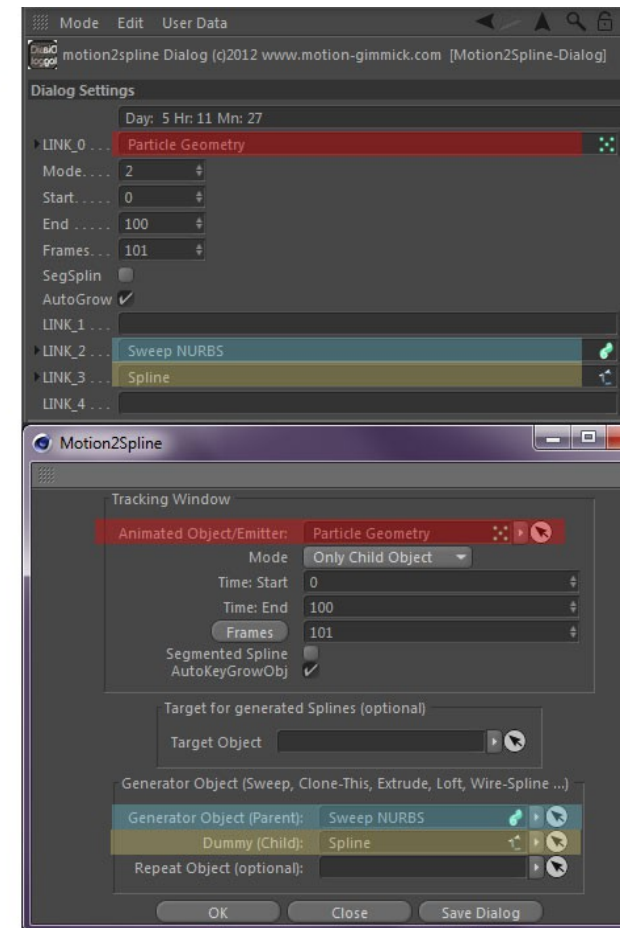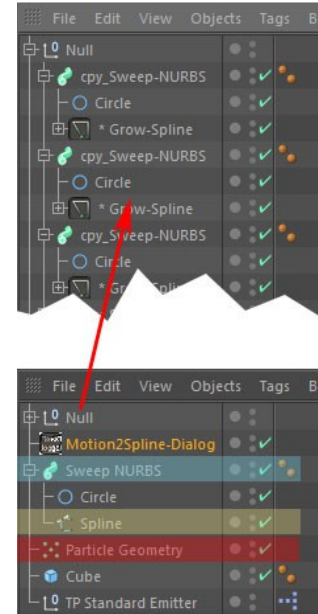
Only save all involved objects with C4d-File.
Next time you load this file you can use the Dialog Object,
Open the Tracking-Window from M**otion2Spline**.

Select **Motion2Spline-Dialog** in Object-Manager.

Put the object with drag&drop into the **Tracking Window**.
All **Links** should now be imported into **Motion2Spline**.

Now you can replace objects in Tracking-Window with new objects in your scene – with drag&drop again.

38. Glue   connect objects to selections

This tool connects objects to selections anywhere in Object-Manager of Cinema.

You can change selections while animation **–** so the objects will move from one selection to the next.

The **Glue** Child-Object is fixed only relative to the reference object.
You can rotate or move the **Glue** Child-Object.
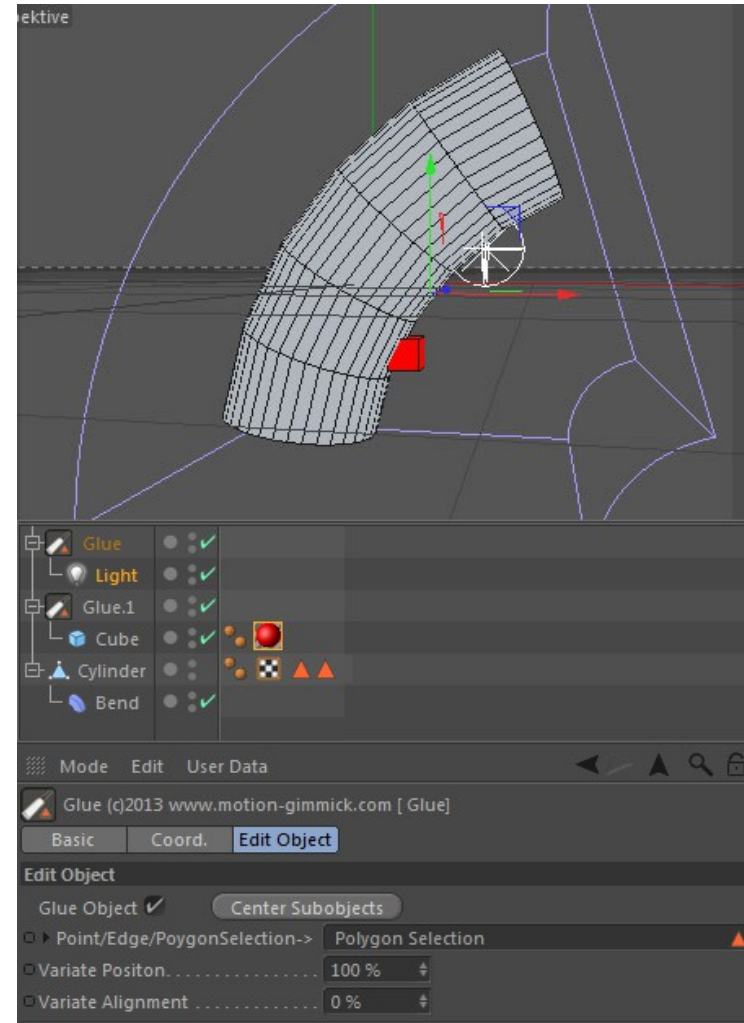
Usage

Glue > Parent-Object
any number of objects > Child-Object

Polygon-object or spline with Selection-TAG anywhere in Object-Manager.

Selection should be:
Point-Selection with min.3 Points
Edge-Selection with min. 2 Edges
Polygon-Selection with min. 1 Polygon

39. Sound-Tag / General

animate parameters by sound

The functions that are explained in this Chapter shall apply to all the Sound-Tags. These differ only in the common parameters with their respective objects.

With * marked tool from **Spline-Time Pro** can also be animated with a **Sound-Tag**:

* **Grow&Morph**
* **Mix-Splines**
* **Add-Splines**
* **Spline2Helix**
* **Super-Sweep**
* **Multi-Tween**
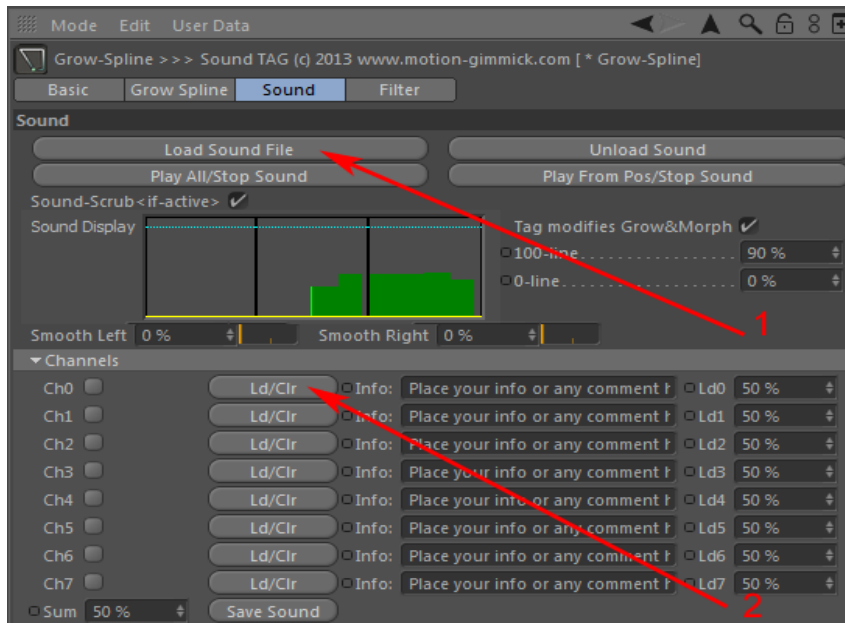
Every Tool marked with * contains this button:
Create Sound-Tag

Once you have pressed this button, the plug-in object appears behind a new icon that signals the a Sound-Tag for this object has been loaded.

The identical icons of object and TAG show that each TAG only is compatible with its object.

So there is nothing, to copy the TAG of Grow-Spline to the Mix-Spline Object.

40. Sound-Tag / Input

Used Sound-Files: ***.wav** (and all formats that are used by Cinema)
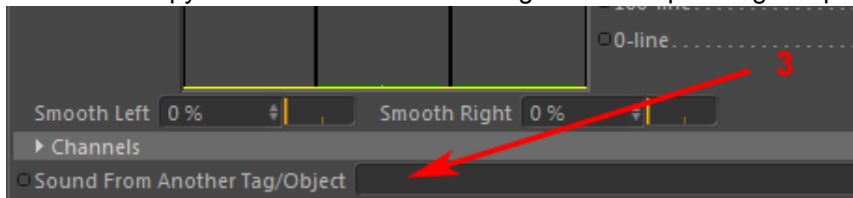
3 x Input Sound:

1. You can load sound from hard disk with **Load Sound File** – Button
2. In the Channel menu – you can Load / Delete Sound in each channel

Reset the parameter values > importing / copy from plug-in Object to Sound-Tag:
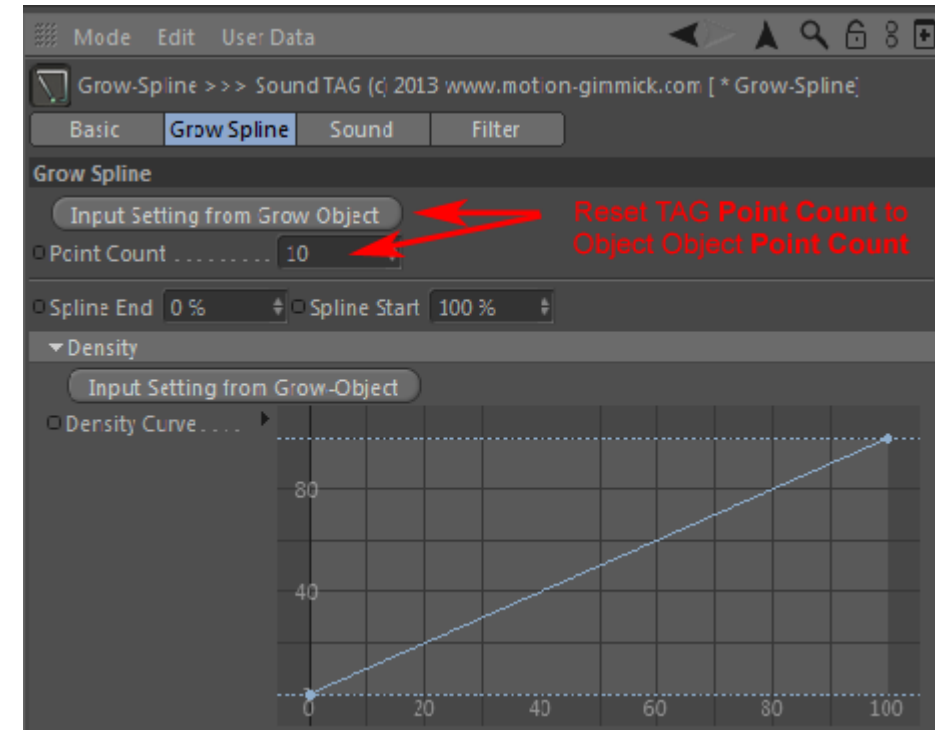
3. You can copy Sound from one Sound-Tag to another per drag&drop:

41. Sound-Tag / Setting

Tag and object contain common parameters. All parameters in the Object marked with a * you can find also in the same Tag again. These parameters can then be animated by sound.

For example:
Object contains the maximum value, Tag contains the minimum value (or reverse). The sound variates the parameters from high peaks (high parameters) to low peaks (low parameters).

Sound-Scrub <if-active> switch Sound on / off > you can hear the sound (or not)
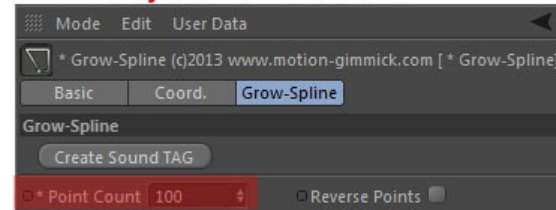
Sound-Tag only plays the sound when object is selected in object-Manager. If you select more than one objects with sound in object-manger – sound is mixed in real time.

Tag modifies **Grow** > Sound compares between Object and Tag parameters and creates animation.
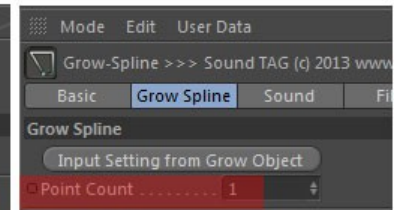
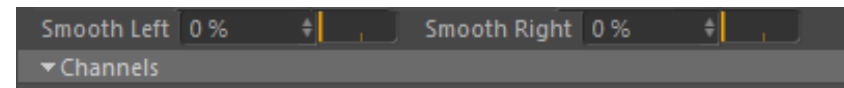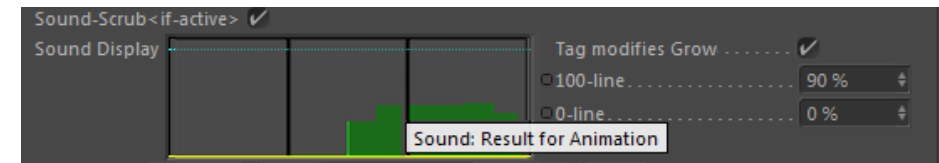**Sound Display >** shows minimum and maximum sound peaks of sound input.

You can define limits to the evaluation of the sound using 100-line for maximum and 0-line for minimum.

A blue lines show the max. and min. limits:

Smooth Left – **Smooth Right** smooth the peaks of the input sound. Animation will work softer.

42. Sound-Tag / Channel

1

Ch0 / Ch1 / Ch 2.....
The **Sound-Tag** manages up to 7 different Sounds or Sound-Channels
at the same tag and time.

You can switch them on / off at the **Ch0** - **Ch7** button.

2
Ld/Clr
Here you can load or delete sound channel by channel

3
Info
Any comment you type into this place will be saved in c4d-file.

4
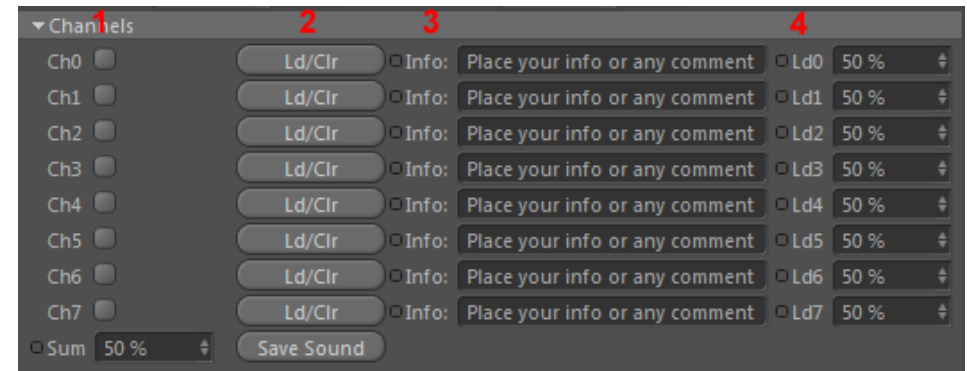**Ld0 … Ld7**
rules loudness of each channel

Sum
Main loudness of all Channels together

Save Sound
Saves mixed channels and filter result.

43. Sound-Tag / Filter

Use Filter > switch Filter on / off

Sound Offset > moves sound forward or backward.

This Sound-Display shows sound result after using Filter and sound-offset in **Sound-Tag:**

1 Beginn Document-Time
2 Beginn der Sound-Time
3. End of Document Preview Time
4. End of Document-Time
red line under display window after **4** > Sound is longer than document.

Filter-Einstellungen:

Frequency:
dampening frequencies (and in consequence > animation)

Right Range
Sound curve after peak

Left Range
Sound Curve before peak
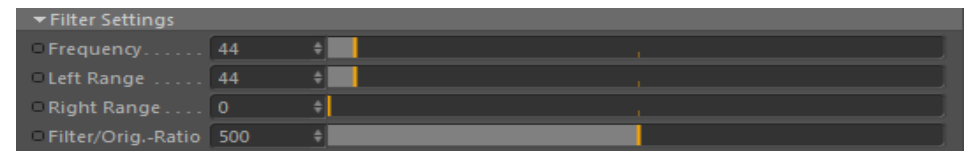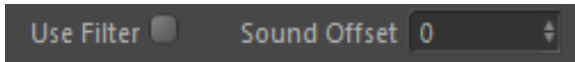
Filter /Orig. - Ratio:

0 = no filter
500 = Mixed Sound
1000 = max. Filter

Copy Filter from another **Sound-Tag** or Object that uses a **Sound-Tag**.
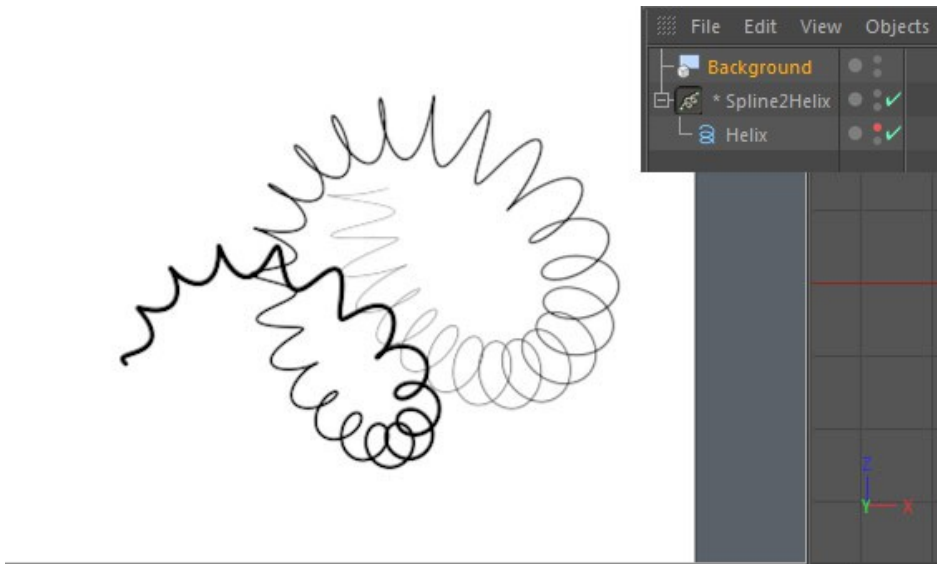
44. Stack Tools / Example 1

Example 1:

... here are some suggestions on the subject of stacking of different spline-time tools.

First we use a Cinema Helix and wrap a spiral around it.
The Cinema Helix is child object to **Spline2Helix**.
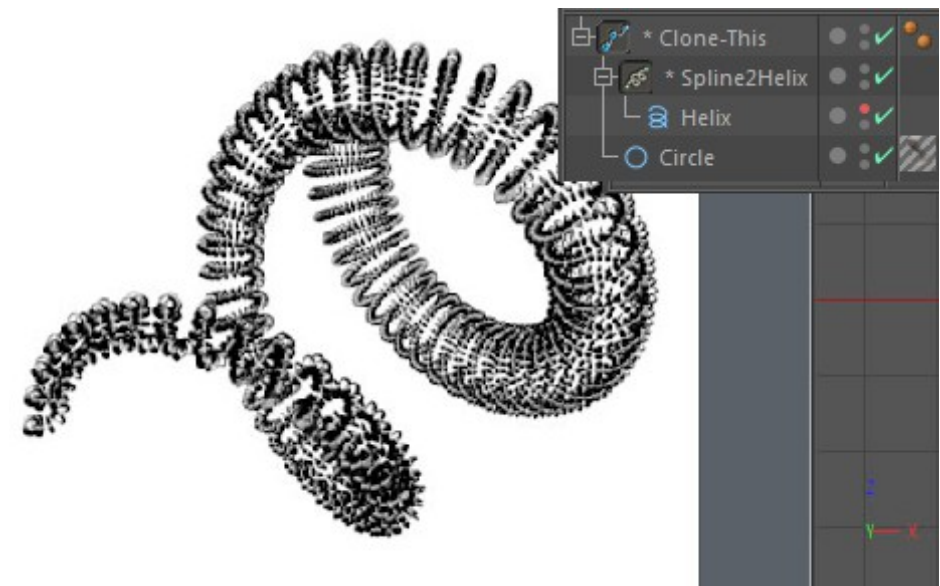Hair Shader was used to render them.

Now we will enhance this example by using **Clone-This.**

First Child-Object to **Clone-this** is **Spline2Helix,** second Child-Object is a circle:

A little circle (radius 5) will be copied along **Spline2Helix** (that wrapped a spiral around the Cinema Helix.

Now only the circle gets the Hair Shader.
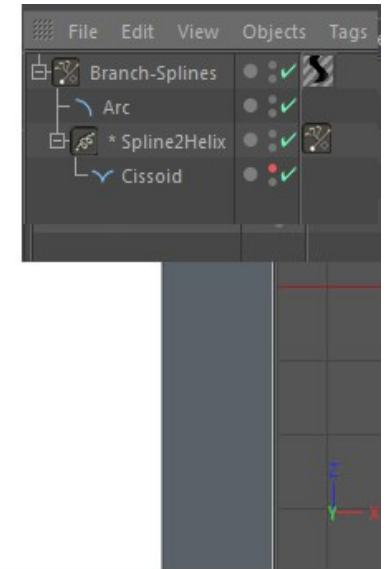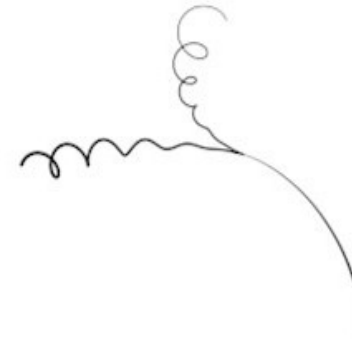
I Think this was easy, wasn´t it ? ;)

45. Stack Tools / Example 2

1. **Create a branch**

a) Load **Branch-Splines** from **Spline-Time Pro** Tab > Parent-Object

b) create arc > 1. Child-Object (this will be our **Centerspline**)

c) start **Spline2Helix** with a Cissoid Child-Object

and give a **Branch-Tag** to **Spline2Helix**

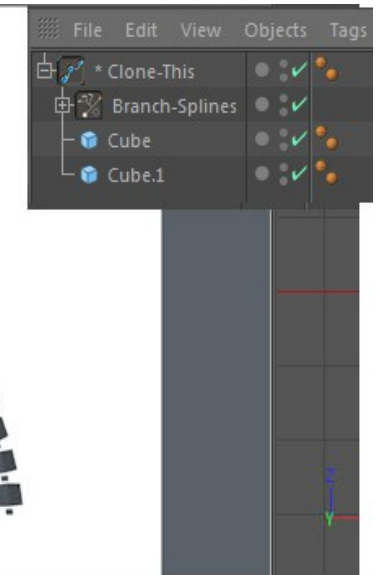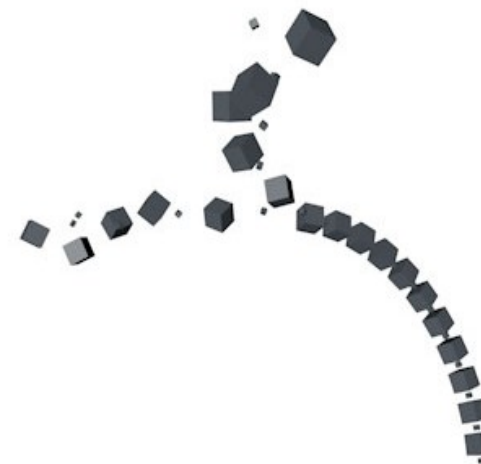**This complete hierarchy is now named Branch-Splines.**

2. **Clone-this**

Start **Clone-This** from the plugin menu **Spline-Time Pro.**
Branch-Splines now becomes the 1. Child-Object to **Clone-This.**

       Cube >   2. Child-Object
       Cube.1 >   3. Child-Object

Clone-This clones Cube and Cube.1 along **Branch-Splines** (using arc
and Spline2Helix) switching from Cube to Cube.1 to Cube to Cube.1 ...

49

3. **Create variations of clones**

Start **Multi-Tween** from **Spline-Time Pro** Tab.

Now **Multi-Tween** variates between Cube and Cube.1 all clones that are created by **Clone-This** along the **Centerspline** > in this example **Branch-Splines** [using arc and **Spline2Helix** (using Cissoid)]

4. **Cloning the clones**

Create another **Clone-This** Object

f.e. named **Clone-this.1** > Parent-Object
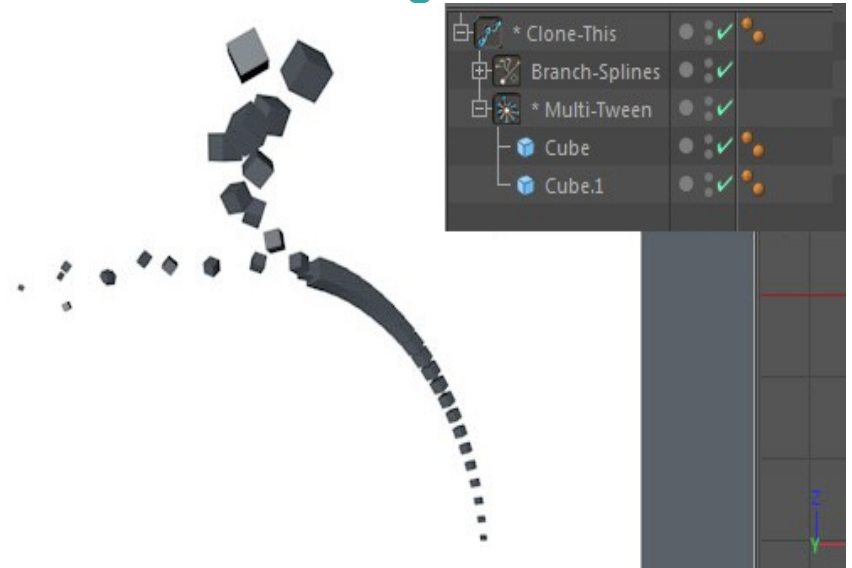
Create a circle > 1. Child-Object

Put the **Clone-This** Object we created in picture **3** under the **Clone-This.1** Object > second Child-Object
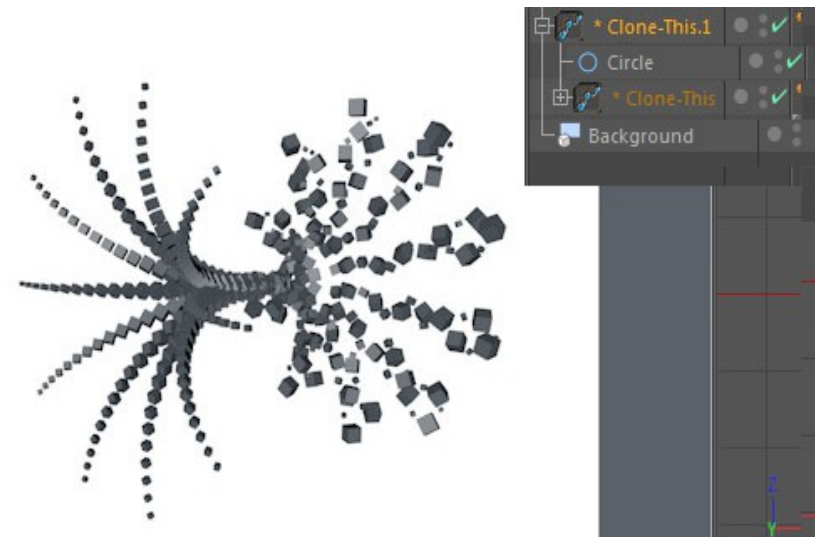
Result:

Clone-This from picture **3** will be cloned around the circle.

46. Postscript

First of all:
a big sorry for my frozen English. I did my very best!!!!

... use our Support:
Feel free to contact us for ideas, questions, wishes, changes ….or help

We continue our development for **Spline-Time Pro....**

Take a look to our website – you are welcome

www.motion-gimmick.de

best wishes

Dagmar Patzer
motion gimmick - MediaArt