REVOLVE

MESH LOOPER

Documentation

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QUICK START

For those who are already familiar with extensions and just want to quickly create a loop, here is a brief description of what you need to do. This is followed by a detailed description of the individual steps.

1. Install the extension „**Revolve – Mesh Looper**“ via your Preferences
2. Select the animated object you want to loop
3. Delete or apply every modifier, that alters the amount or indices of the vertices of the mesh. Keep the ones that are just deforming the mesh (like the Cloth modifier for example).
4. Open the 3D view side panel by pressing „N“ and navigate to the tab called „**Mesh Looper**“
5. Set an output directory and a name for your Alembic file
6. Set the **Loop Start**, **Loop Length** and **Transition Length** of your loop
7. Choose a loop transition mode – smooth or linear.
8. Press „**Create Loop**“

If you check the box „**Import Alembic file after loop was created**“, the Alembic file will be imported automatically into a new collection called „Mesh Loop Alembics“ for you to see what was generated.

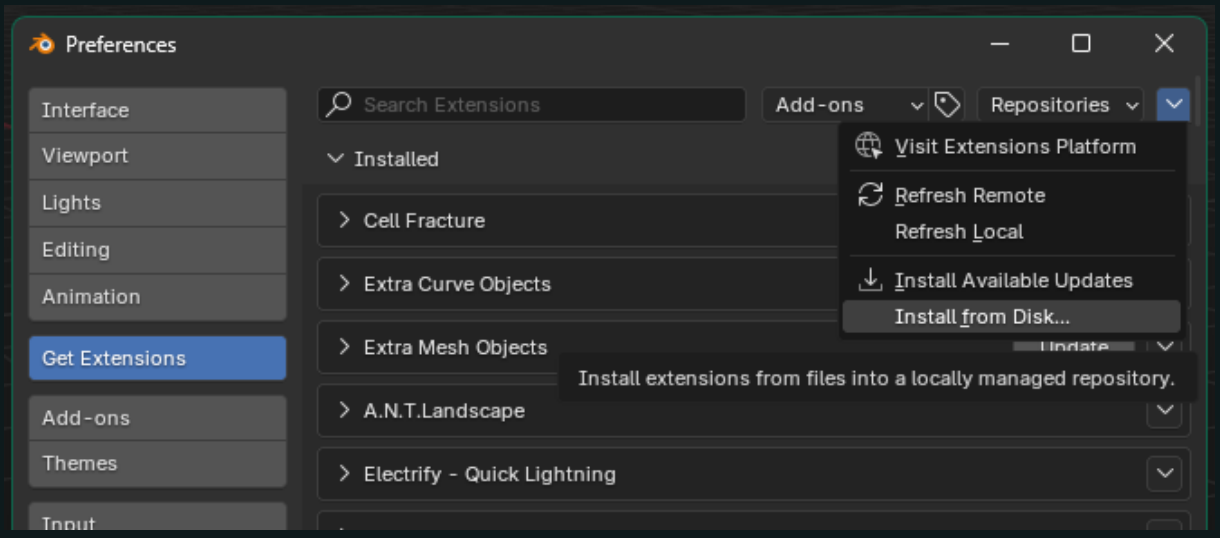
IN-DEPTH HOW TO USE

INSTALLATION

1. Download the **Revolve_Mesh_Looper.zip** from Superhive

2. Open Blender and go to Edit → Preferences → Get Extensions

3. Click on the dropdown in thje upper right corner and choose „Install from Disk“

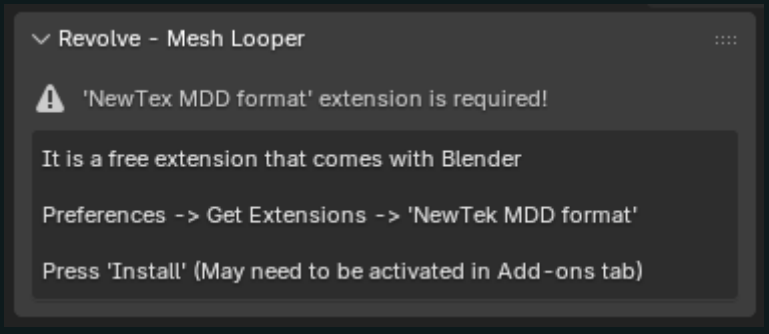


4. Navigate to the direcory you saved the zip file in and double click it

This will install the Revolve – Mesh Looper add-on.

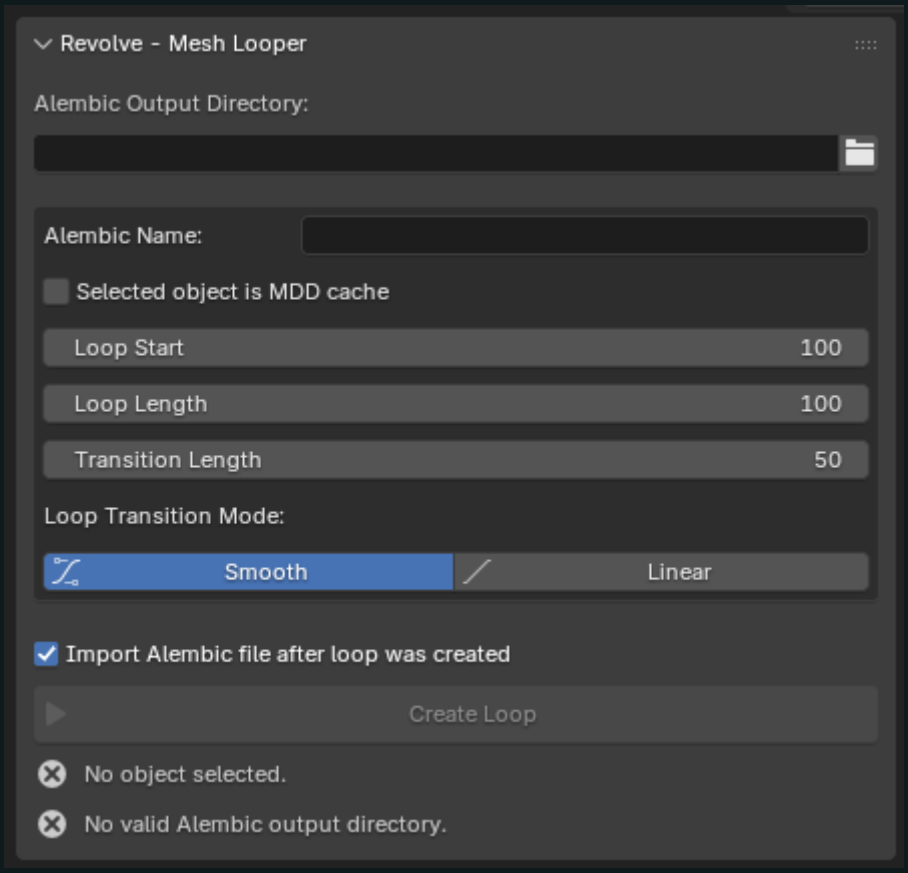
In the 3D viewport press „N“, which will open the side panel. Here you will find a new tab called „Mesh Looper“.

You will be greeted with an error message, stating, that the „NewTek MDD format“ extension is missing. The 'NewTek MDD format' is a **free extension, that comes with Blender**. It is used by the addon, since it makes it way easier to manipulate the animated mesh data than alembic for example.



If this message does not appear, it is most probably already installed.
As it is already written in the add-on panel, just go to your Preferences again and search for „MDD“ in the „Get Extensions“ Tab. The extension will pop up. Press „Install“ on the „NewTek MDD format“ extension.

Now, back in the add-on panel, it should look something like that:



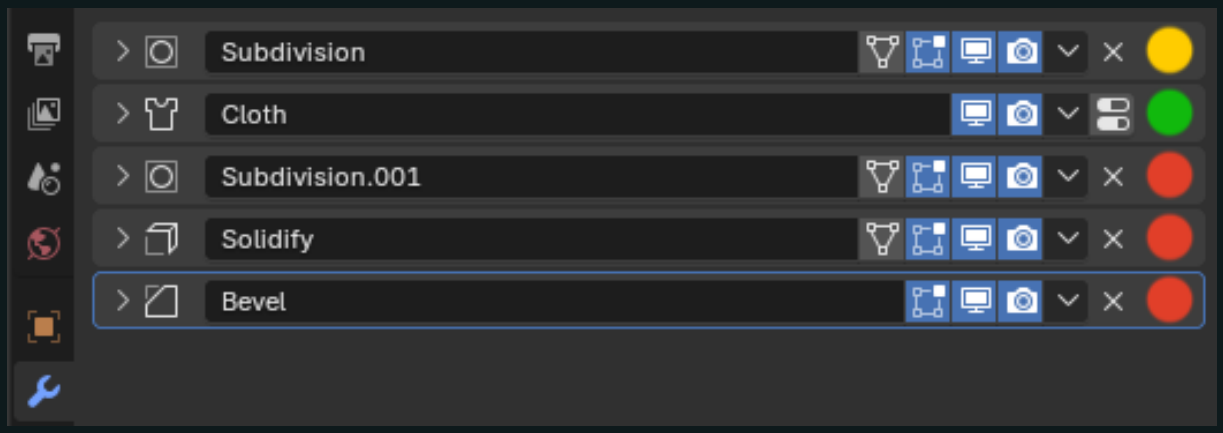
You have now successfully installed the addon and can start to create loops!

LOOP CREATION STEPS

First things first: It goes without saying that **some animations loop better than others.** Even though the add-on does most of the work for you, you still need to make sure that the animation makes sense when looped. The output can only be as good as the input. That said, let's create a loop!

For an example, to demonstrate how the add-on works, let's take a look at a cloth simulation. **It is already baked** and ready to loop.

1. Before we can press „Create Loop“ we need to make sure, that the object has **no modifiers on it, that alters the vertex amout or their index**. The add-on works with the unmodified version of the mesh – modifiers are not taken into account. If you have an Subdivision Surface modifier in front of your Cloth modifier, for example, apply it first.
   Lets say this is your modifier stack:



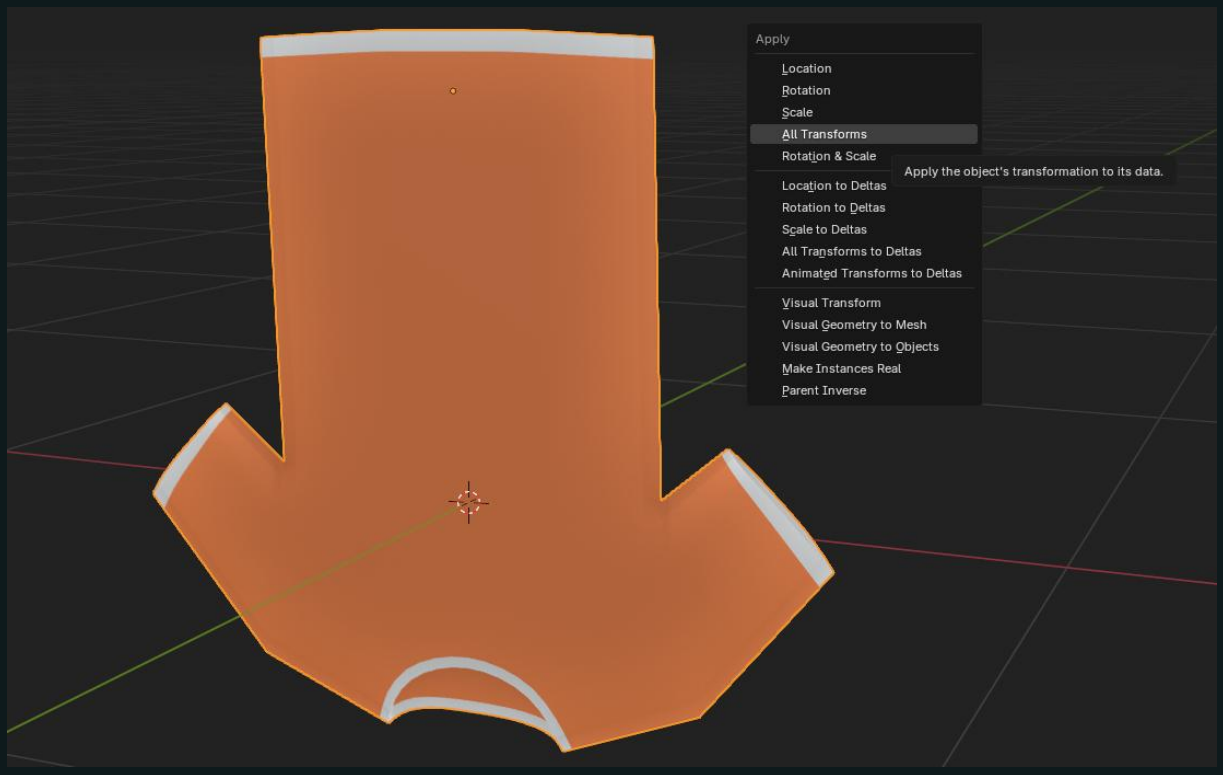
Yellow: This modifier needs to be applied, since it comes before the modifier(s) that manipulate the position oft he vertices of the mesh.

Green: Since this is the modifier, that moves the vertices you want to keep that.

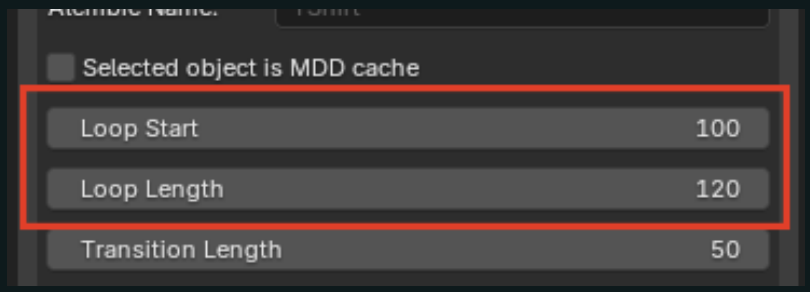
Red: Remove these modifiers. You can add them again to the Alembic file, that will be generated and you will have the exact same result.

If you forget to delete the modifiers, the Alembic output will most likely be a jumbled mess!

2. Apply the transform of your mesh. Otherwise the loop Alembic file will have a different scale and/or rotation.
   So make sure to press „**Ctrl + A**“ and choose either „**All Transforms**“ or „**Rotation**“ AND „**Scale**“

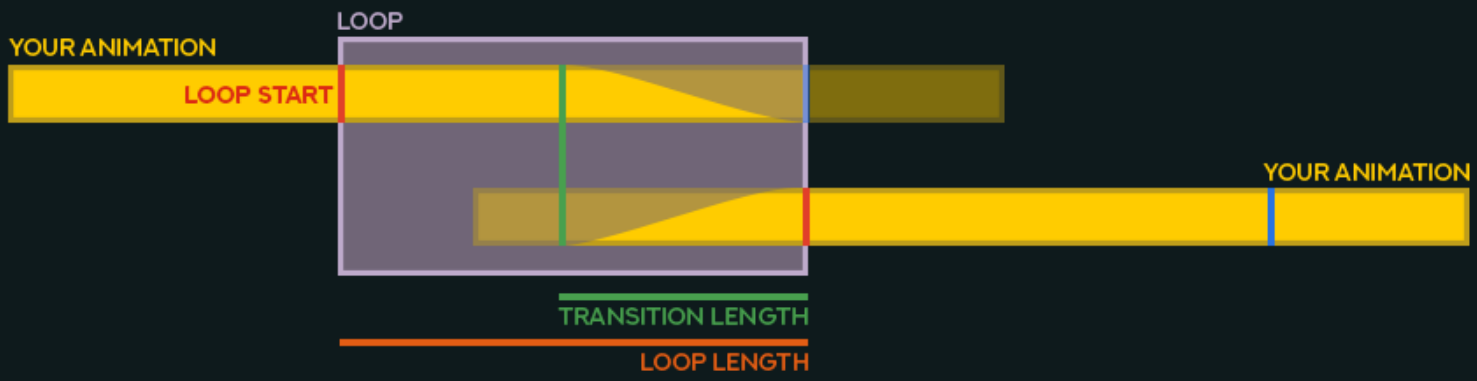


3. Choose your **Start Time** and **Loop Length**.
   Scroll through your animation and choose a **starting frame** for the loop. This step is very important, as it is responsible for how seamless the loop will look. Now search for the **ending frame**. If possible, search your animation for a frame in which the mesh looks roughly the same or at least moves in the same direction as the starting frame. The better these two selected frames match, the more seamless the loop will be. The amount of frames between the start and end frame you selected will be your „**Loop Length**“.
   Now you know your two most important variables – enter them into the corresponding fields in the addon panel.



4. Set the „**Transition Length**“.
   When creating a **loop**, the **animation of the mesh** is essentially blended into itself. During the time specified as “**Transition Length**”, the **original animation** is blended with a **copy of the original** so that the first and last frames of the animation are identical. Depending on the mesh deformation sometimes a longer transition looks better that a short one. In other cases a short one looks better – just experiment a little to find the perfect value.

   To better runderstand, what the values do, here is a visualization of how the add-on creates the loop:



   The frame you set as the **Loop Start** will be the first and last frame of your **loop**. This means that the add-on needs some time before and after this frame to create the transition. So if you have your loop start at frame 20, the add-on has a maximum of 20 frames available to create the transition. Fewer frames, such as 10, are possible, but it cannot create a 30-frame transition if it only has 20 frames available.

5. Choose a „**Loop Transition Mode**“.
   With “Smooth” and “Linear,” you can either transition gradually or evenly between the two animation strips - just like the interpolation mode you can set in Blender's Graph Editor. In most cases, you will probably use “Smooth” to achieve the best results.

6. Set an „**Alembic Output Directory**“. This is, where the finished loop will be saved as an Alembic file.

7. Give the Alembic file a name, or leave the textbox empty, if you want the add-on to use the objects name.

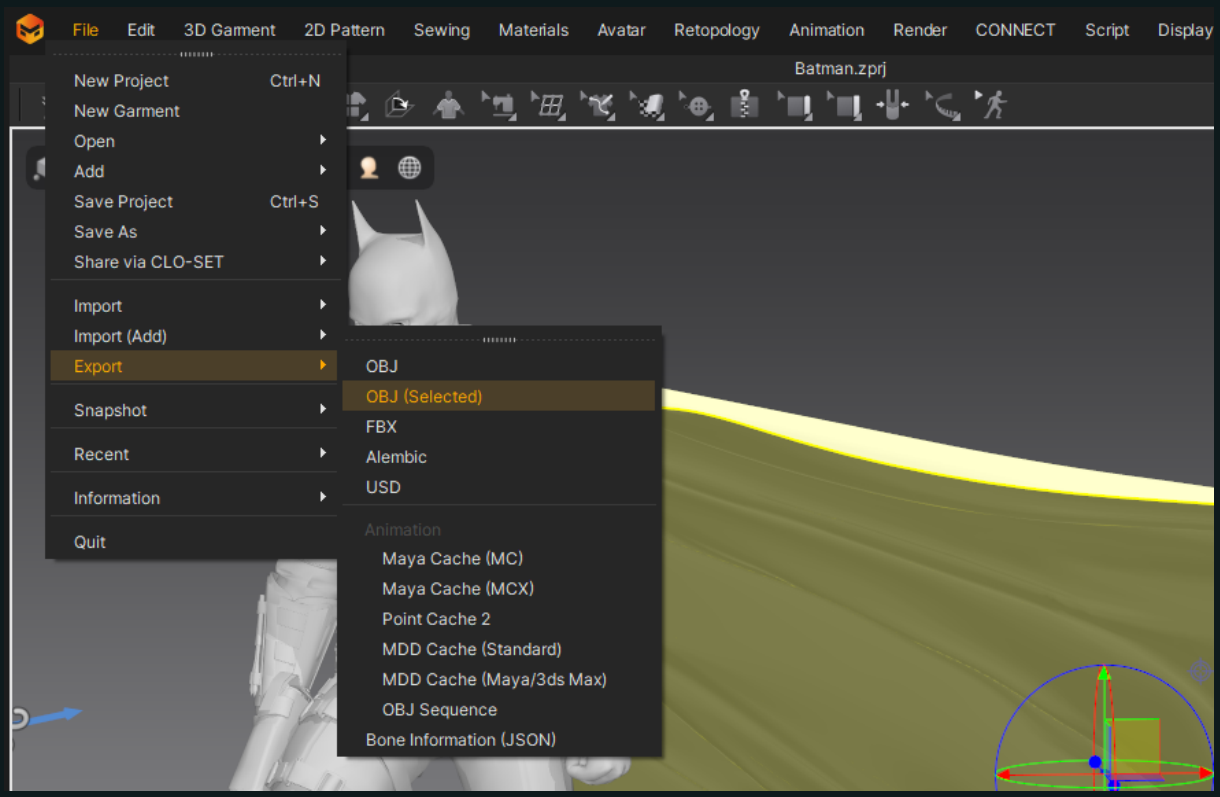
8. If you want to see the result right away, check the box „Import Alembic file after loop was created“. It will be imported into a new collection called „Mesh Loop Alembics“. If you leave it unchecked, it will just export it as an Alembic file without loading it into your scene

9. Finally! **You are ready to generate a loop!** Click “**Create Loop**” to see if the settings you have chosen create a loop that you like. If not, press “Ctrl + Z” and change the settings again. If you leave the name unchanged, the Alembic file will be overwritten in your output directory.

MARVELOUS DESIGNER SIMULATION LOOP

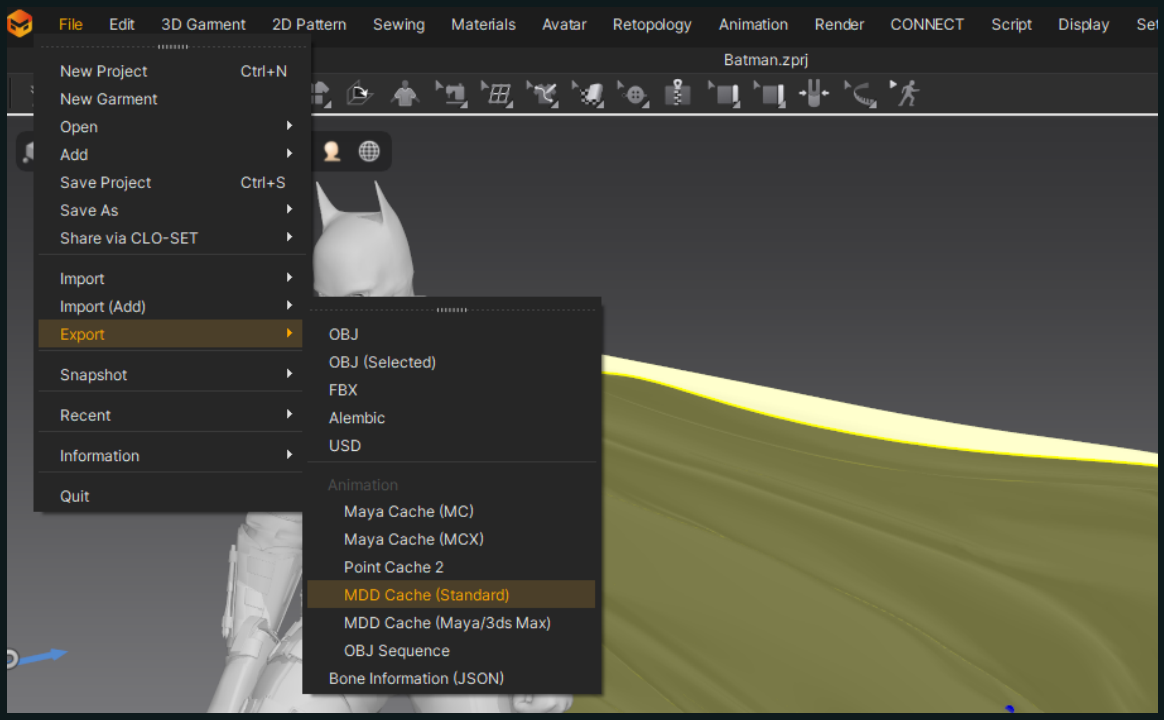
Of course, you can also loop a cloth simulation from Marvelous Designer. However, the workflow will be slightly different.

1. Since the add-on works with MDD files, we can’t just export the garment as an Alembic. Therefore, in Marvelous Designer, select your simulated garment, that you want to loop and export it as „**OBJ (selected)**“.



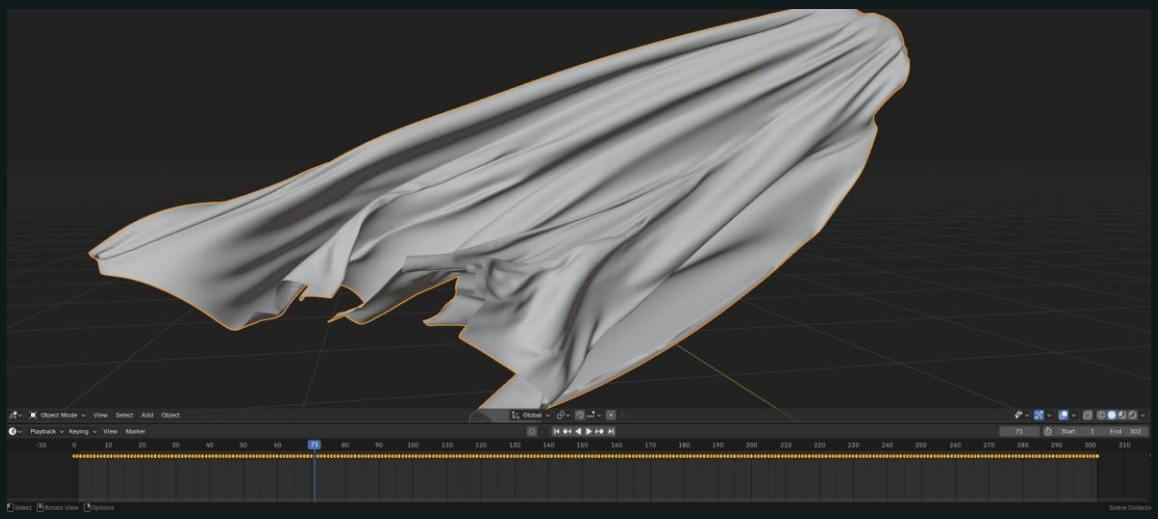
Rember your export settings, as they will become important in step 2!

2. Now, in addition to the OBJ file, we need to export the file as an „**MDD cache (Standard)**“. Be sure to select the exact same export settings as in step 1. You may need to experiment with the setting “**Axis Conversion**” to ensure that the two files have the same orientation in Blender as in Marvelous Designer.

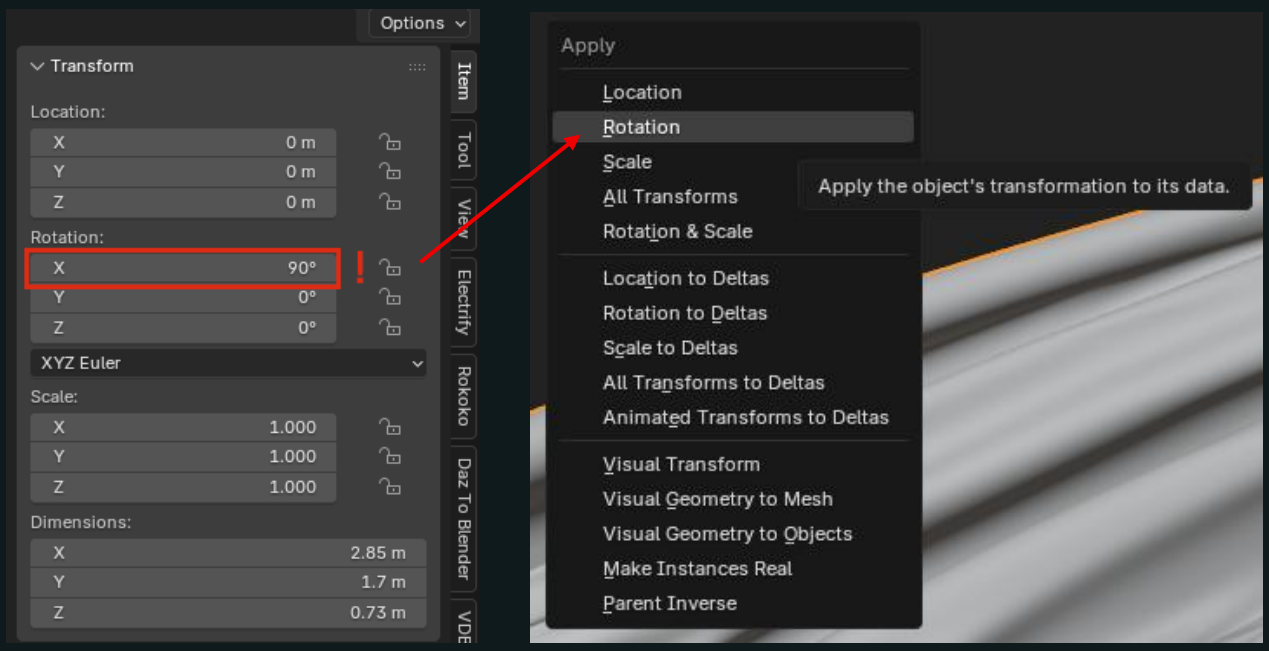


3. Back in Blender, import the OBJ file: File → Import → „**Wavefront(.obj)**“

4. With the imported OBJ object selected, import the MDD cache onto it
   Select OBJ → File → Import → „**Lightwave Point Cache (.mbb)**“
   Depending on the amount of frames and vertices, this will freeze Blender for a few seconds. Once it‘s done importing, you should see your object with an animation on it. Scroll through the timeline to make sure it moves as intended.



5. **Make sure your objects transform is zero in scale and rotation**. You can check that by selecting the object and pressing „N“ in the 3D viewport. Then go to the „**Item**“ tab and check the „**Rotation**“ and „**Scale**“ values.
   If one of these values is not 0, select the object and press „**Ctrl + A**“ in the 3D viewport and apply the rotation and/or scale



6. Now open the add-on panel in the „N“ menu and check the box „**Selected object is MDD cache**“.

7. You can now enter all the settings you want and create the loop as you normally would

NEED HELP?

Please **first look at the FAQ**. I always update it. If you have a common problem, there is a chance, that there is **already an answer for you**.
You can find the FAQ on the shop page:

https://superhivemarket.com/products/revolve-mesh-looper/faq

If you still have any questions or problems with it, **feel free to contact me** and I will try to answer as soon as possible.
To contact me, just click on „**Contact the creator**“ on the shop page right beneath the product price.

Have fun with the add-on!