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Making a Subdivision Surface Version of a Tree

Overview

When creating a subdivision surface version of one of the many trees in the SpeedTree Model library, there are a couple of steps that you need to consider. Depending on what you wish to achieve, then there may be a very noticeable difference between the tree model and the SubD version of the tree.



The pros of recreating a SubD version of a tree:

1. All the textures and leaf meshes of the tree can be reused.
2. Properties from a generator node can be copied and pasted to a subD generator node.

Things to Keep in Mind

No Bifurcation

The '*Bifurcation*' attribute is not applicable in SubD modeling. In order to recreate the bifurcated effect, an extra branch generator will have to be added and adjusted to obtain a similar look.

Accuracy

If there is too small of a value set in 'Accuracy', the forces and disturbance will not have such a profound effect as it did with the model you are replicating.

Segments

Depending on how much of the model you want to make subdivided, you can use regular spine generators and combine them with the subD generators. However, when combining the two generator types, it is important to make sure that there are enough length and radial segments in the parent subD generator. If there are not enough segments, then children branches will appear to be floating off the subD spine since the lack of segments hinders the branch from accurately following the spine path.



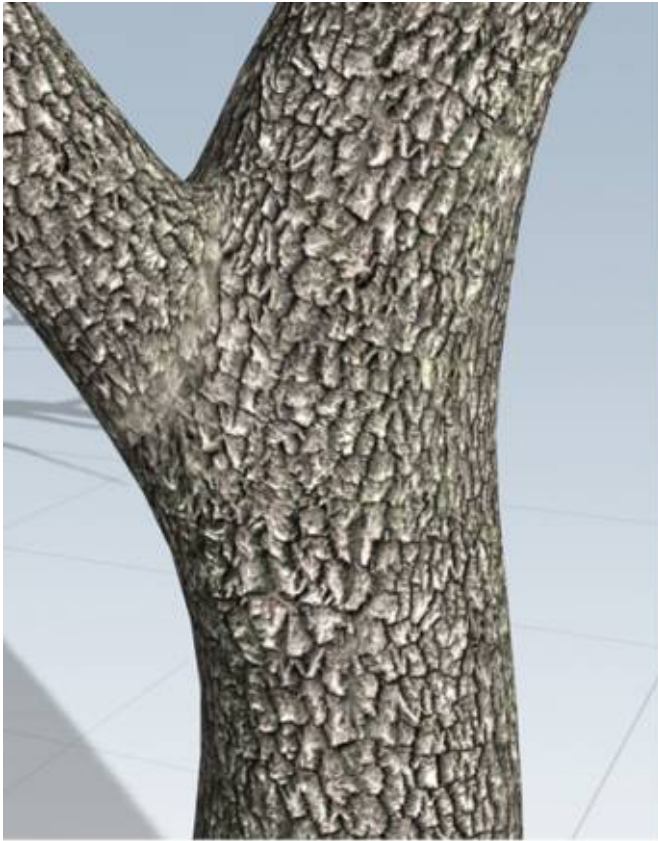
In the above example, one level of branches is created using a subD generator, but the regular spine generator can be used for the twigs. With a low segment length count, the twigs growing off the subD branches appear to be floating. This can easily be fixed by adding more 'Segments' and increasing 'Accuracy'.

UV Texture Coordinates

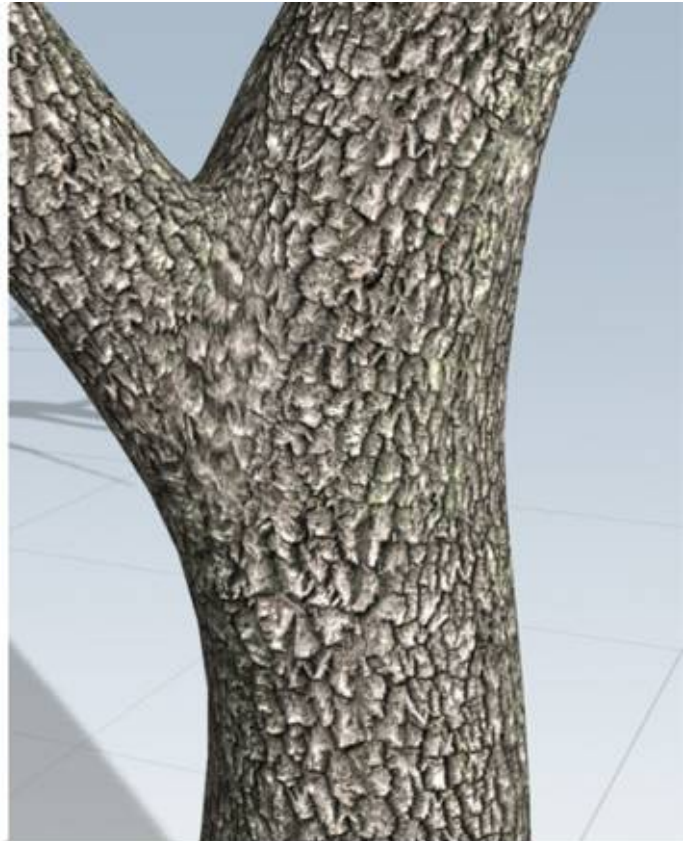
It is important to make sure the texture coordinates of each generator are adjusted correctly to fit, allowing a seamless and smooth transition.

Branch Intersection Weight

Since the subD version of the tree is one solid mesh, the material textures of junctions will be more similar a match, which means that the '*Branch Intersection Weight*' may need to be adjusted to accommodate.



Branch Intersecting Weight = 4



Branch Intersecting Weight = 0

Absolute/Relative

Check to make sure the styles, '*Absolute*' and '*Relative*', correspond with the styles set in the original model; unless you chose to change the style.

- These style settings can be found under the '*Generation*', '*Segments*', '*Spine*', '*Branch*', and '*Texture Coordinates*' groups.

Return

'*Return*' is a property that forces the spine to return to its original growth path after jinks and disturbance are applied. This property enhances the naturalness of the branch appearance, but is a property that only exists in the SubD generator controls. If your goal is to replicate the original model, then change the '*Return*' value to 0.

You can also add detailed personal touches to the model with individual node edits. So just like creating any other tree, SubD modeling gives you the freedom to be creative!

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