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# Generate Hair Curves

Generates new hair curves on a surface mesh. The curves are generated from scratch at point locations; if creating curves that depend on existing curves is desired, the [Interpolate Hair Curves](#) is a better choice.

## Note

This node/modifier will not function without the *Surface* geometry/object and *Surface UV Map* inputs.

## Inputs

### Surface

Surface geometry for generation. This input takes priority over the corresponding object input if both are provided.

### Surface

Surface object for generation (The transforms of this object must match the modifier object).

### Surface UV Map

Surface UV map stored on the mesh used for finding curve attachment locations.

### Surface Rest Position

Set the surface mesh into its rest position before attachment.

## Tip

In a typical hair generation setup, this node or modifier will be combined with the [Deform Curves on Surface Node](#). If that operation comes after this one, it makes sense to turn this option on so the position used is the pre-deformed position consistent with the expectations for the deformation's input.

### Hair Length

Length of the generated hair curves.

### Hair Material

Material of the generated hair curves.

### Control Points

Amount of control points of the generated hair curves.

### Poisson Disk Distribution

Use poisson disk distribution method to keep a minimum distance. See the [Distribute Points on Faces](#) for more information.

### Density

Surface density of generated hair curves.

### Density Mask

Factor applied on the density for curve distribution.

### Mask Texture

Discard points based on an mask texture after distribution. The image is sampled with the *Surface UV Map* input.

## Tip

The accuracy of sampling the image doesn't depend on the density of the surface mesh's vertices because it is sampled after the curve root point

the accuracy of sampling the image doesn't depend on the density of the surface mesh. Fewer vertices means less samples and the more samples are generated, the accuracy. However, using the *Density Mask* input instead can give better performance. Using them in combination can give the benefits of both methods.

### Viewport Amount

Factor applied on the density for the viewport.

### Seed

Random seed for the operation.

## Properties

This node has no properties.

## Outputs

### Geometry

### Curves

### Surface Normal

Normal direction of the surface mesh at the attachment point.

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