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Blend Controller

Blend controller takes two input and mix them using the third input (Blend amount). Below is the formula used in blend controller :

$$R = a * (1 - x) + b * x$$

Where :

R : is the result (output)

a: is the first controller

b: is the second controller

x: is the blend amount ($0 < x < 1$)

According to the above formula if the blend amount is zero the result will be equal to the first controller and if the blend amount is 1 then the controller will return the value of the second controller. For blend amount .5 we have $R = .5 * (a + b)$ which is the average of the two inputs.

Input

Controller A	<input type="text" value="None"/>
Controller B	<input type="text" value="None"/>
Blend amount	<input type="text" value="None"/>

The type of controller you can assign to the channels A and B is the same type as the output type. Hence if you choose scalar type for output then you can only assign scalar inputs to A and B.

The blend amount is always scalar and must be a value between 0 to 1. Normally a graph controller is best choice for this channel allowing a linear and curvilinear transformation of the values.

Note : Blend amount is not supplied the default value (zero) will be considered in above formula, therefore the controller returns the same value as controller A

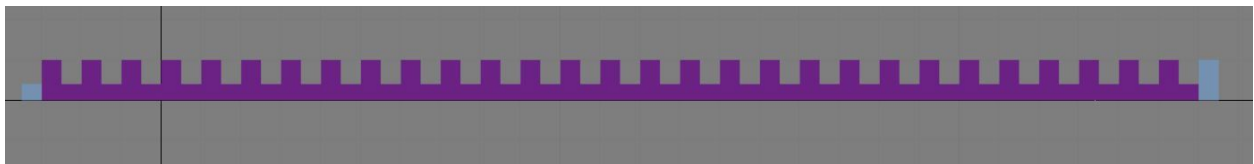
Output

Blend controller supports Scalar, Vector and Matrix types.

Scalar Output

Below example demonstrates use of blend controller with scalar output. The height of the box in the **Parametric Array** node is controlled by a blend controller. Note the result of each **pattern controller** and the result of the blend controller.

Result of pattern A alone



Result of pattern B alone



Result of blend controller. Note the pattern matches the pattern A at the beginning of the array (left) and then it matches pattern B as the end (right).

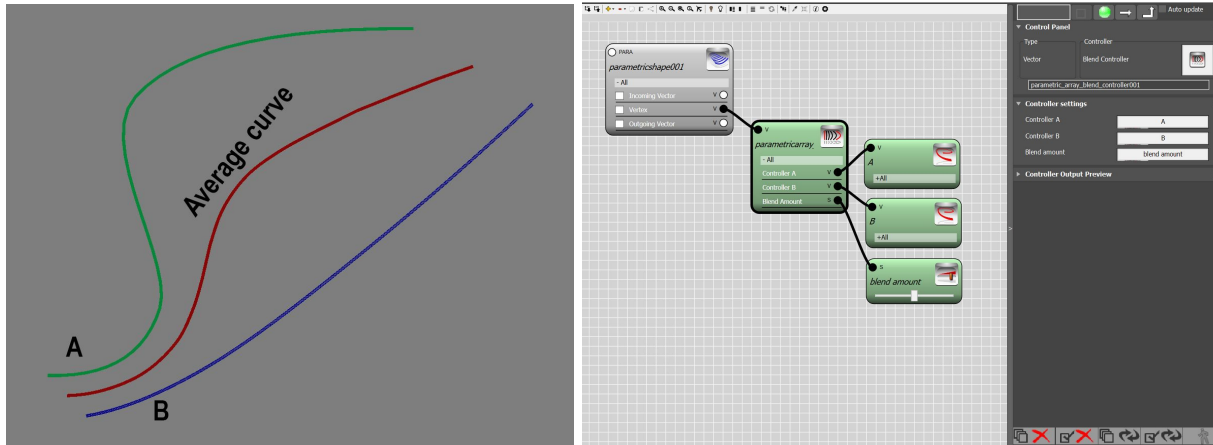


The blend amount and entire Paraflow.

The image displays the software interface for a blend controller. On the left is the 'Controller settings' panel for a 'Graph Controller' with a spline graph. In the center is a 'Paraflow' node diagram showing a 'blend' node connected to 'Controller A', 'Controller B', and 'Blend Amount' nodes, which are then connected to 'parametricarray' nodes. On the right is the 'Control Panel' for the 'Blend Controller' showing 'Controller A' set to 'A', 'Controller B' set to 'B', and 'Blend amount' set to 'parametric_array_graph_con'.

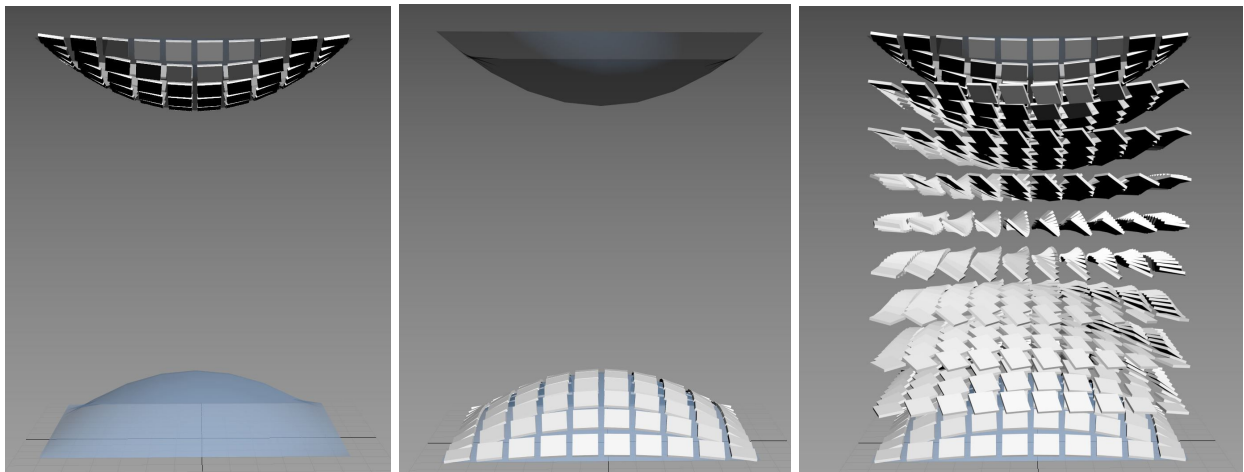
Vector Output

Blend controller can also mix the vector inputs using the same above mentioned formula. In the example below a blend controller is used to create the average curve from two splines. Note that the blend amount is the constant value of 0.5 .

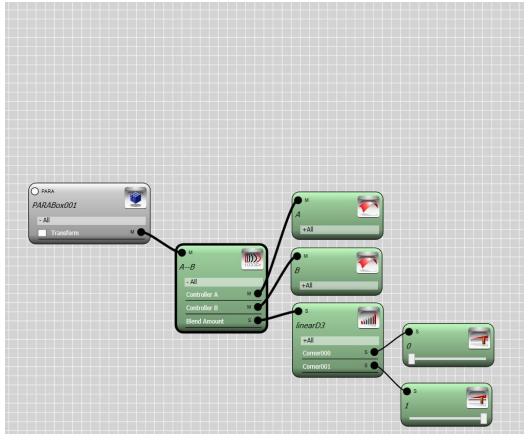


Matrix Output

Blend controller can mix transformation matrices using the same formula. In below example the result of two surface controllers are blend using a linear transformation on the D3. the **linear controller** generates the values between 0 and 1 along the 3rd dimension of the array, therefore the members with **index3 = 1** are placed on the surface A and the members with **index3 = count3** are placed on the surface B. members in between generates the transition between the surface A and B.



Top Left: the result of Surface controller A / Top Middle: the result of Surface controller B / Top Right: The blend controller result
Below Left: Two surface controller blends Below Right: Linear controller settings



Type: Controller

Matrix: Blend Controller

A-B

▼ Controller settings

Controller A: A

Controller B: B

Blend amount: linear_D3

► Controller Output Preview

Type: Controller

Scalar: Linear Controller

linear_D3

▼ Controller settings

Dynamic update

Dimension

1D. 2D. 3D.

Total Incremental

Controller override

Corner000: 0

Corner001: 1

► Controller Output Preview