VisIt - Bug # 1304: Elevate operator is not working with streamlines.

Status:	Pending	**Priority:**	Normal
Author:	Brad Whitlock	**Category:**	
Created:	01/11/2013	**Assigned to:**	
Updated:	01/18/2013	**Due date:**	
Likelihood:	3 - Occasional		
Severity:	3 - Major Irritation		
Found in Version:	2.6.0		
OS:	All		
Support Group:	Any		
Subject:	Elevate operator is not working with streamlines.		

Description:

This is from a user in the visitusers.org forum. He is trying to elevate some streamlines to look at them with some other geometry. It might be that once the surface is elevated that the streamline filters don't know how to handle it. In this case, it would probably make more sense to elevate the streamlines after they have been created. But that currently requires an export step.

Report:
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I am working with a 2D depth-averaged flow model on a structured curvilinear grid in CGNS format.

The elevate transform seems to work just fine for scalar and 2D vector display but not for streamlines.

The streamline source is defined along a line
Start: [15400 4440 0]
End: [15400 4630 0]

and works until I try to pair it with another plot using the Elevate by Variable transform with a scalar.

Once the elevate transform is enabled, the error I get is:
The Streamline plot of variable "VectorVelocityXY" yielded no data.

If I check the "Elevate with zero height" option the streamlines are created, but are sitting down at a zero elevation (below the other elevated scalar dataset).

I've tried changing the z-coordinate of the start/end line to 1 or greater without success.

What is the preferred method to elevate a 2D streamline plot by a scalar variable so it can be paired with a 3D plot?

History

01/11/2013 08:02 pm - Brad Whitlock

- File elevated_screenshot.png added

I'm guessing that since the Elevate operator deforms the surface into 3D before the streamline integration has been done that it gets confused. I don't know whether the streamlines are set up to integrate over a 2d surface in 3d.

I worked around this by creating the Streamline plot and making it extract the height variable that I wanted to use. Then I exported the streamline plot to a VTK file. In a new window, I added my 2d mesh with an Elevate operator. Next, I opened the VTK file with the streamline data in it and added a Pseudocolor plot of it, making sure that it also used an Elevate operator. This approach works but it is not so convenient.

It would be better if the Streamline plot was better at integrating over a 2d surface in 3d. Another way to do it would be to make a Streamline operator that could extract the data before feeding into an Elevate operator.

01/18/2013 02:08 pm - Eric Brugger

- Status changed from New to Pending

Files

elevated_screenshot.png	130.3 KB	01/11/2013	Brad Whitlock