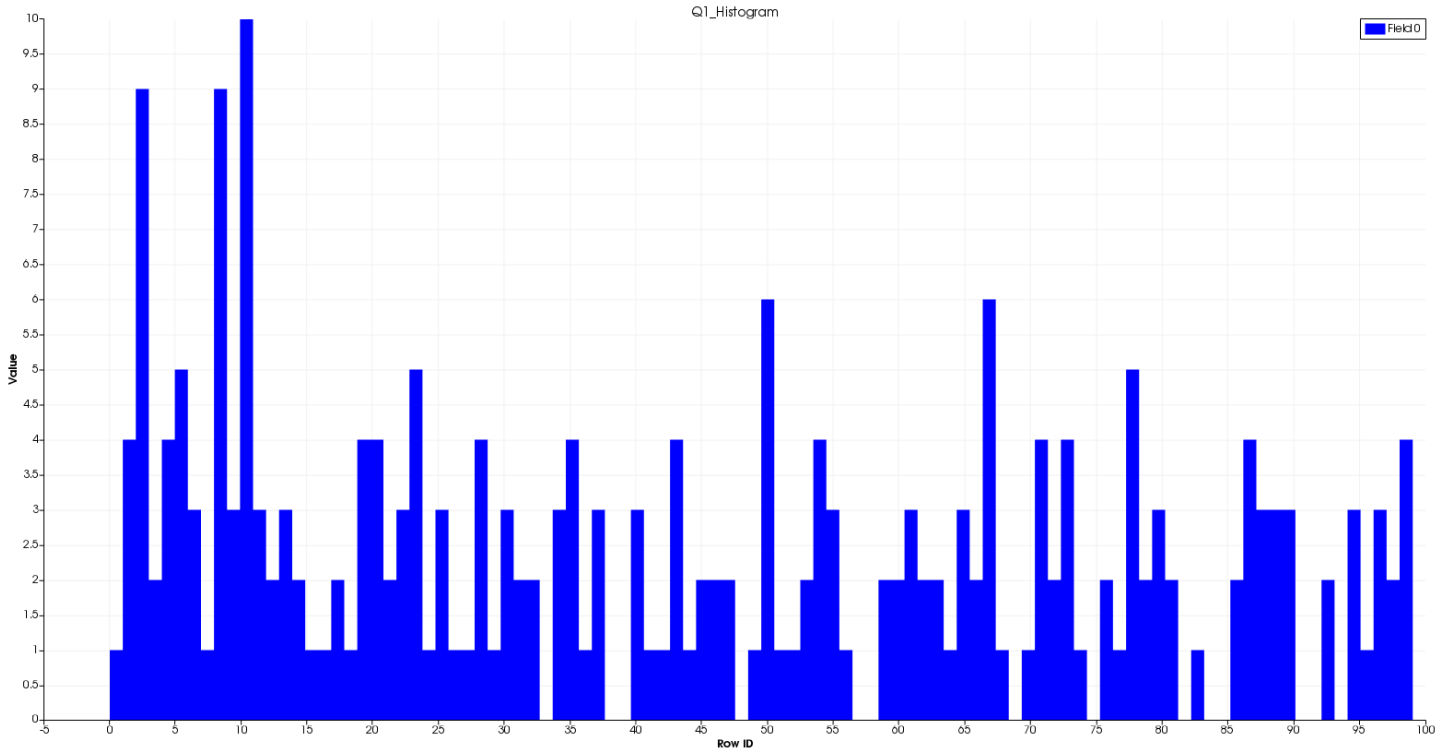
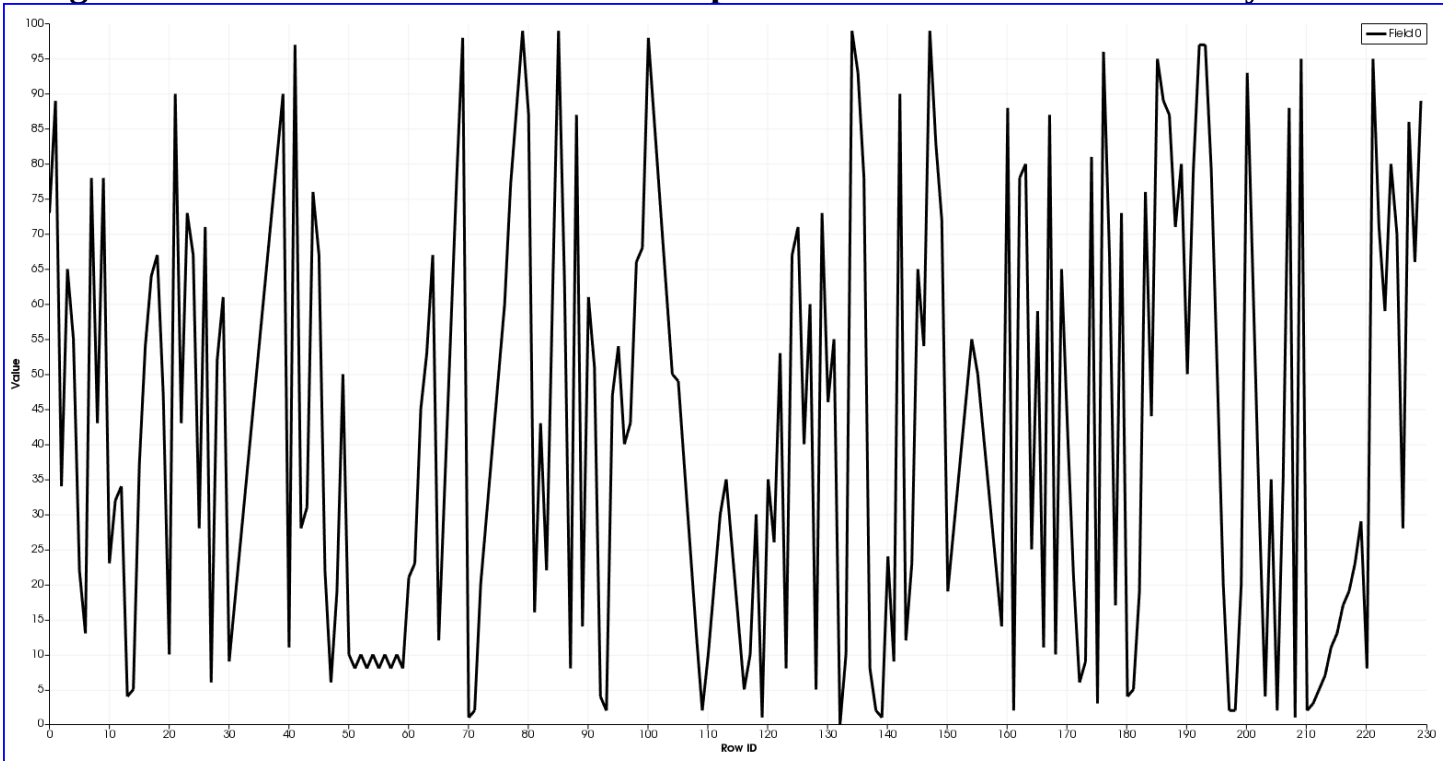
Q1)

Visualization of Statistics for 1-D data





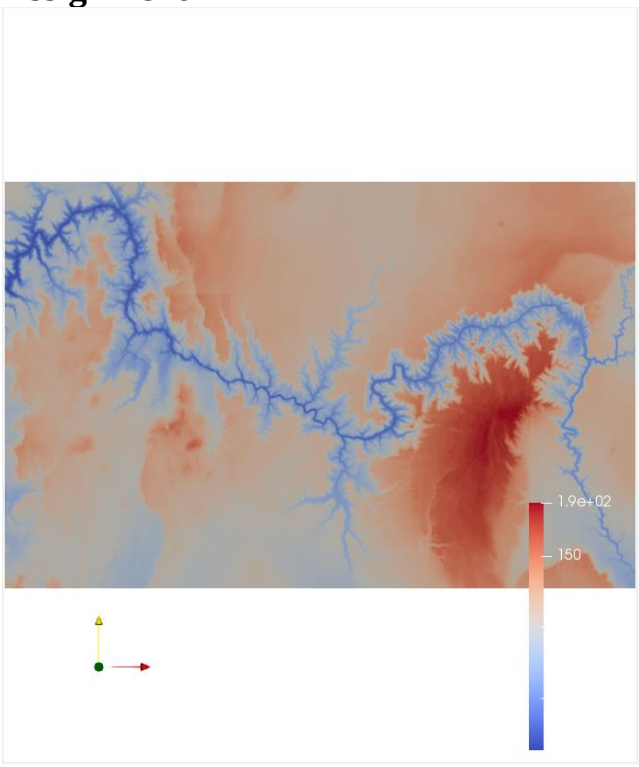
a. 10, Because 10 happens 10 times
b. 14

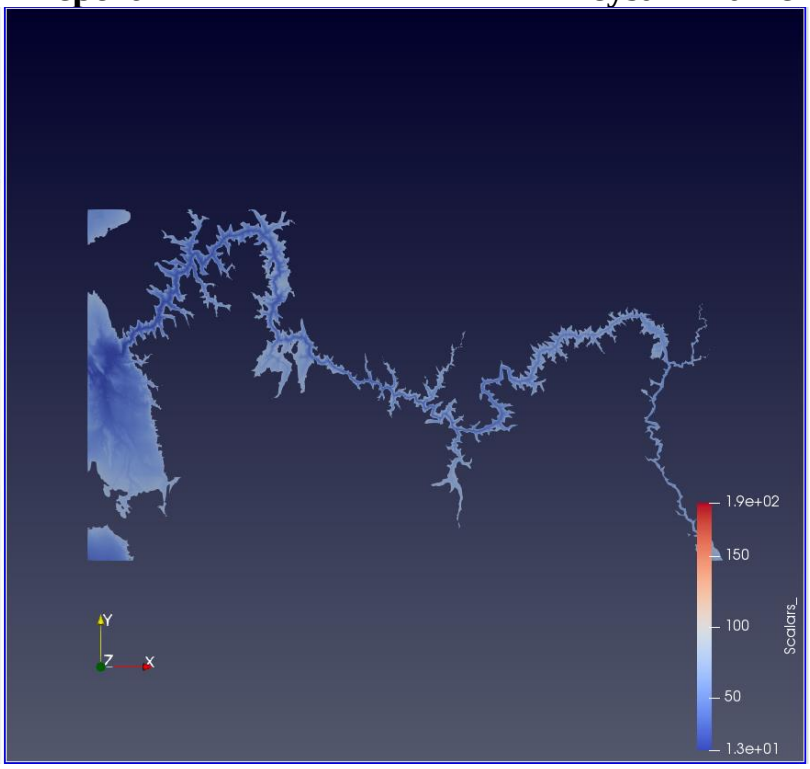
Q2)

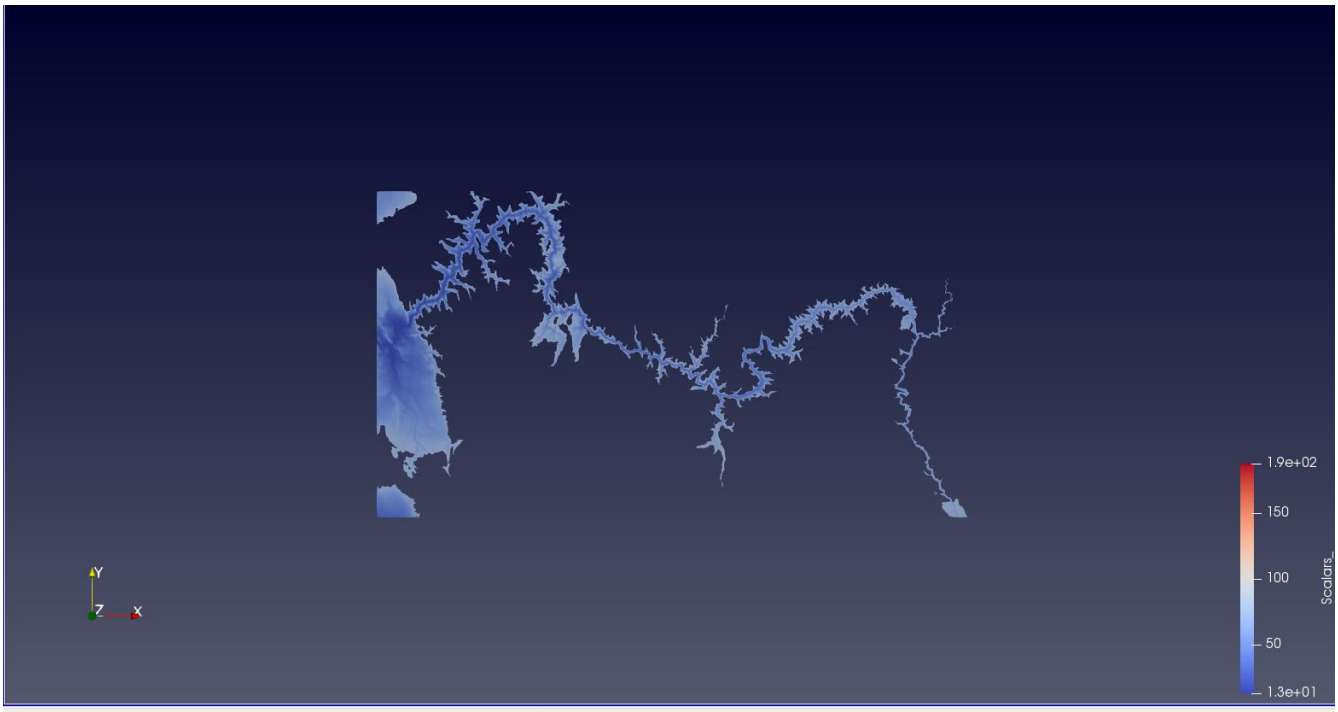
Visualization of 2d Image

We need to calculate number belong to the canyon in this case is a blue sign. In this case we need to clip them out. We need clip the value belong the canyon. I change the bin count to 41 to get a better result. As you can see in the histogram graph bin count 80 has the closest value to 200000, in this case I just use Threshold filter on this specific value. In our case most of the value belong to riverbed are above the 80, we can use Threshold filter to remove the value under the 80. I changed the value for Max to 74 on properties for Threshold to get a result for just the river.

In general intensity value is between 80 t0 140 we have a high frequency. Vertical(times) horizontal(bins)


1.9e+02
150


Y
Z
X
1.9e+02
150
100
50
1.3e+01
Scalars_


Y
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X
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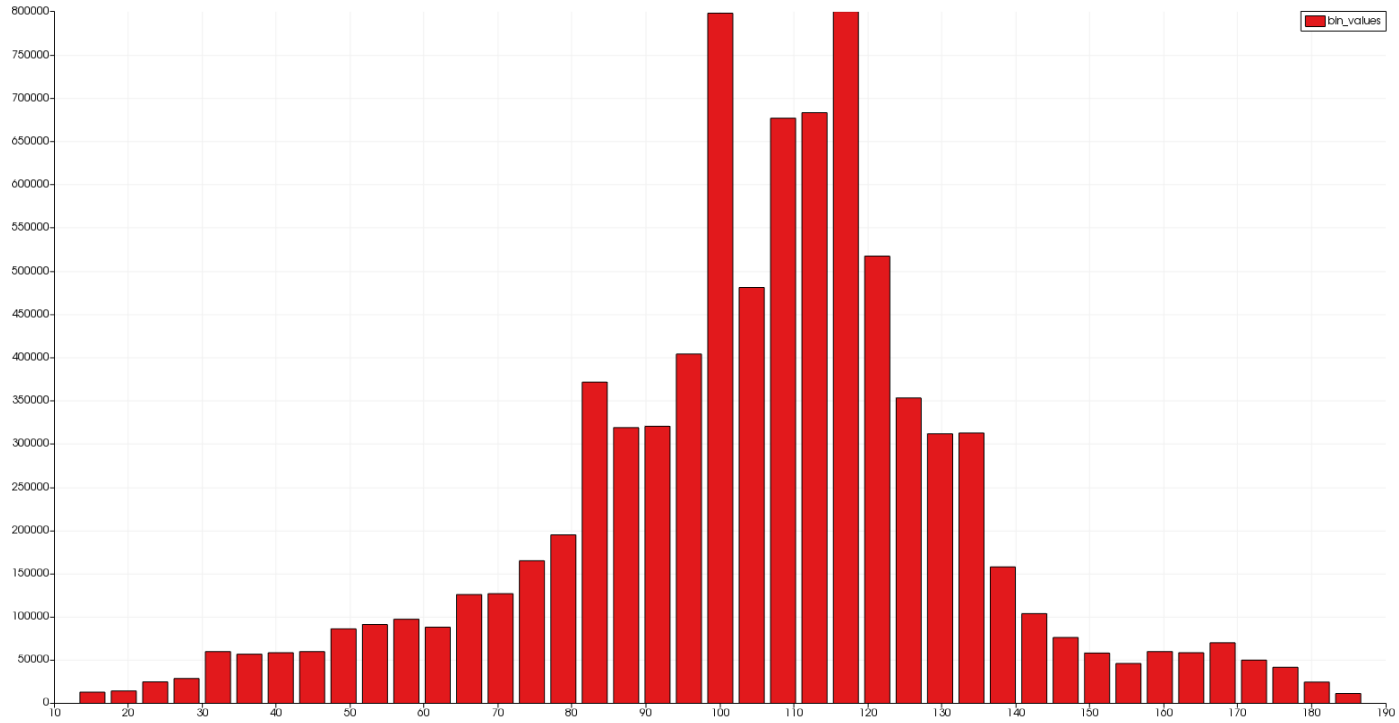
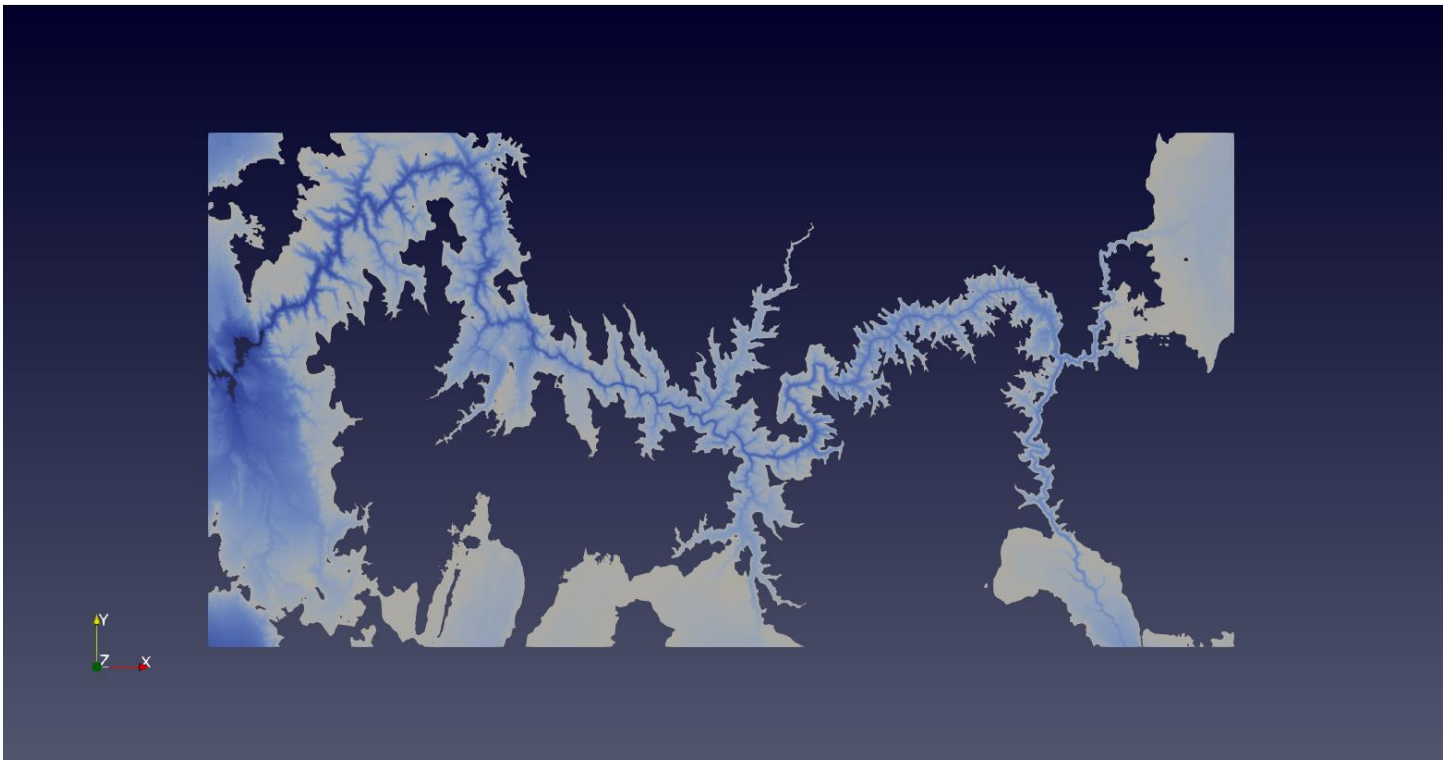
Scalars_





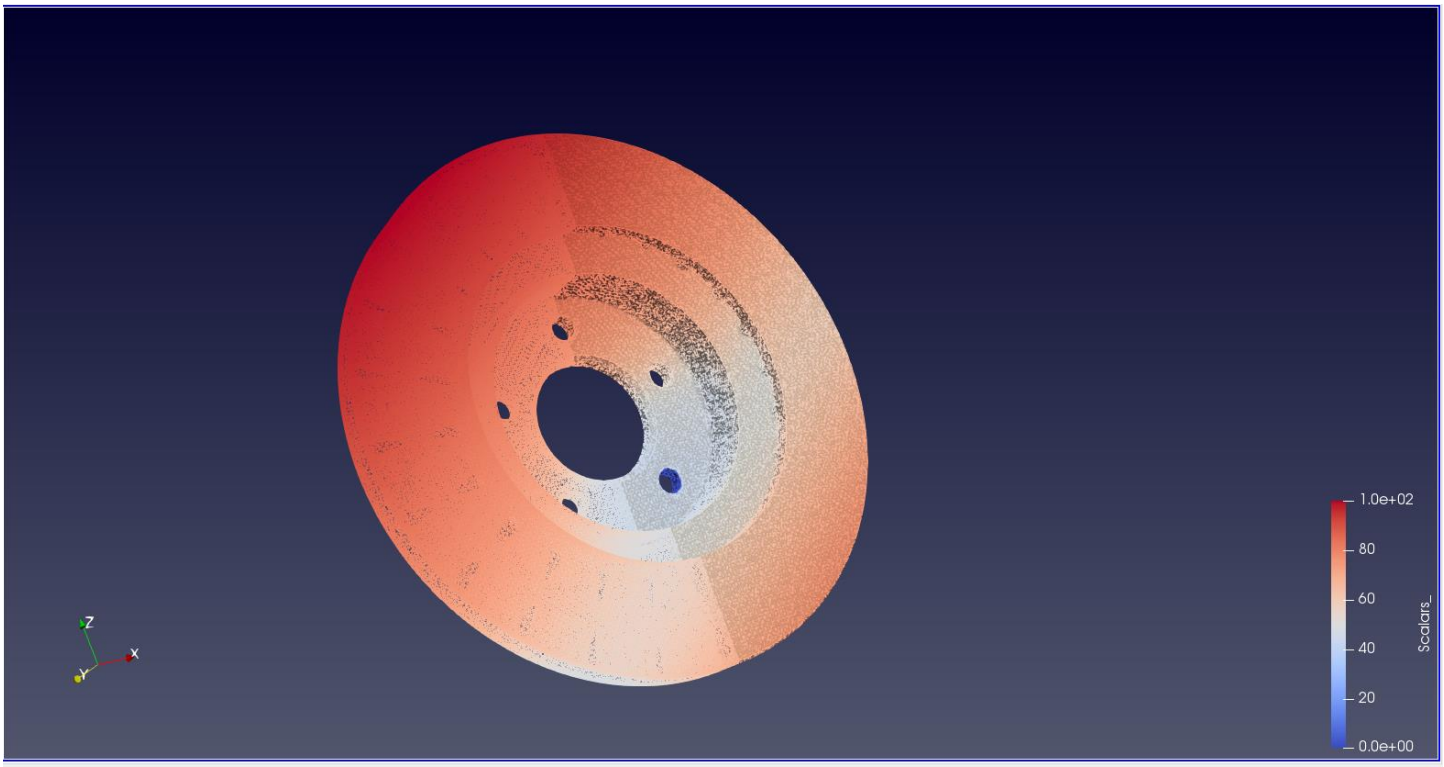
I change the value for Min and Max for Thresholds filter for min I chose 17 and for max I change it to 100 in this case I got a inaccurate result because it is does not show just a river part also shows the canyon part as well. The main part for this question to just show the result for river part.

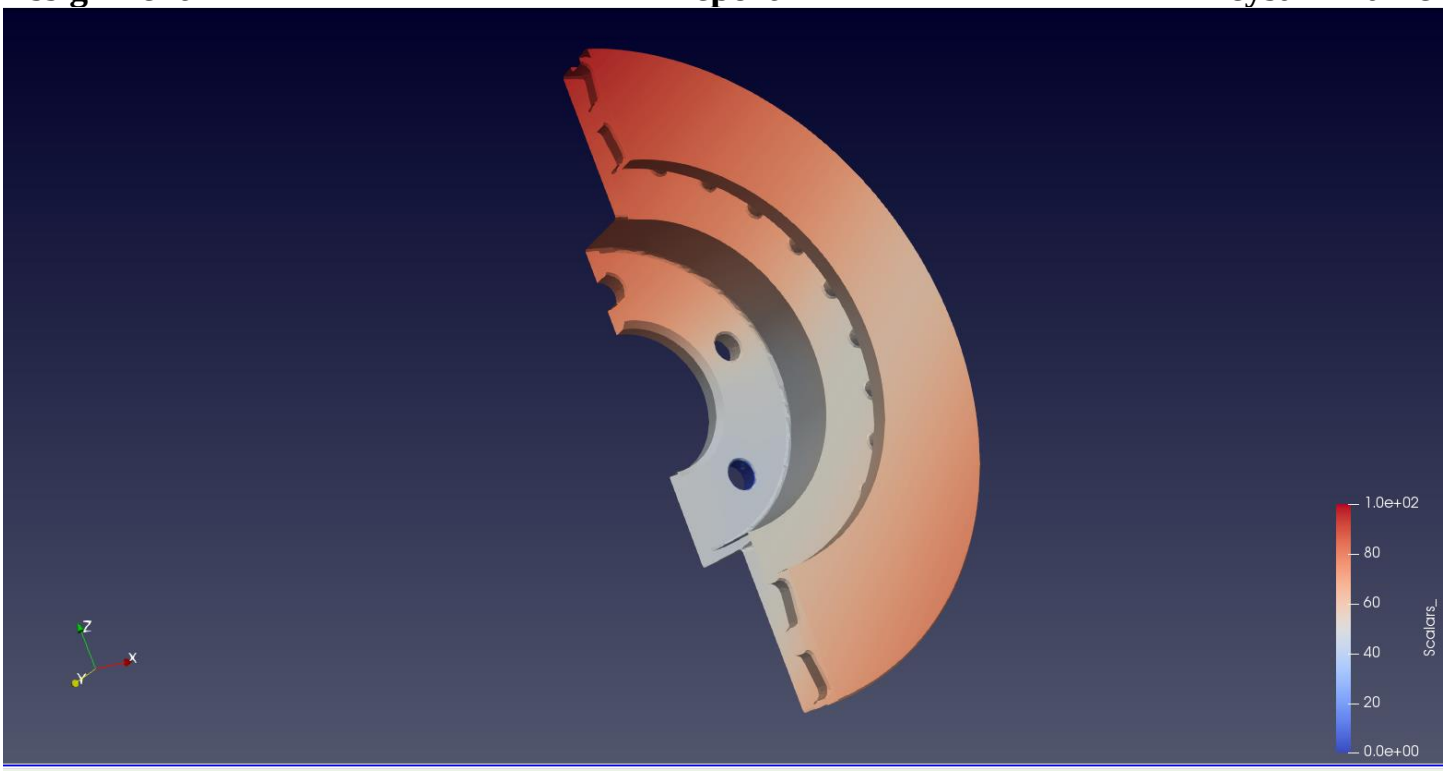
Q3)

Exploring Data on Polygonal Meshes

I changed the surface to the wireframe to see the more details on the cylinder. I used the clip filter for this cylinder, I deactivate the eyes on surf.vtp to see how this filter works. After I just see the half of the cylinder.

We need to find insensitive vale associate with blue reign and after we need to find min and max. We need to run histogram and clips filter to find it. Best way to find max and min to use multiple clip's filter around blue reign and after that we need to use histogram to see max and min number for this blue reign.




Z
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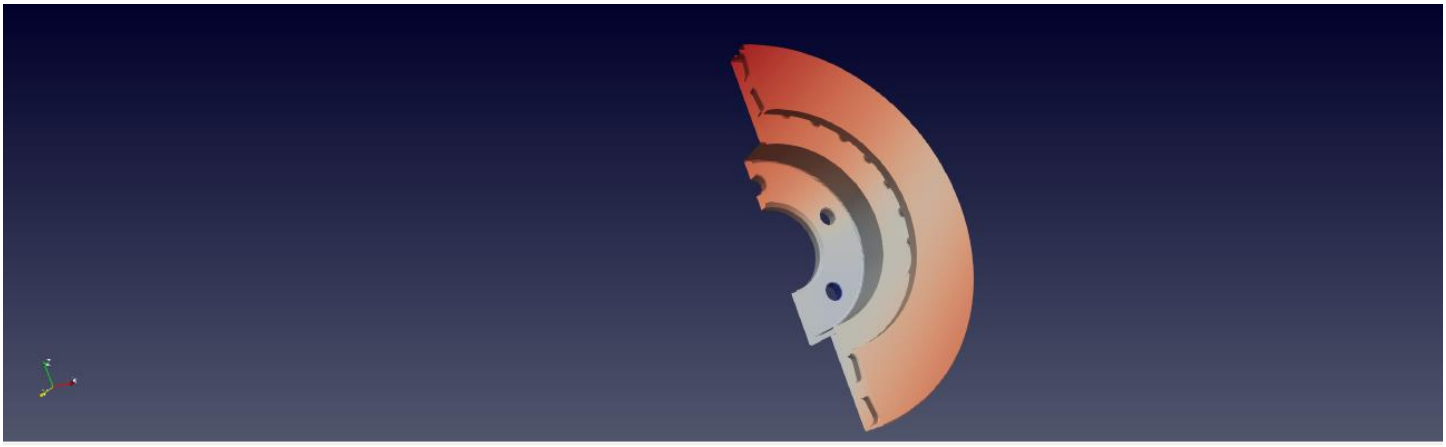
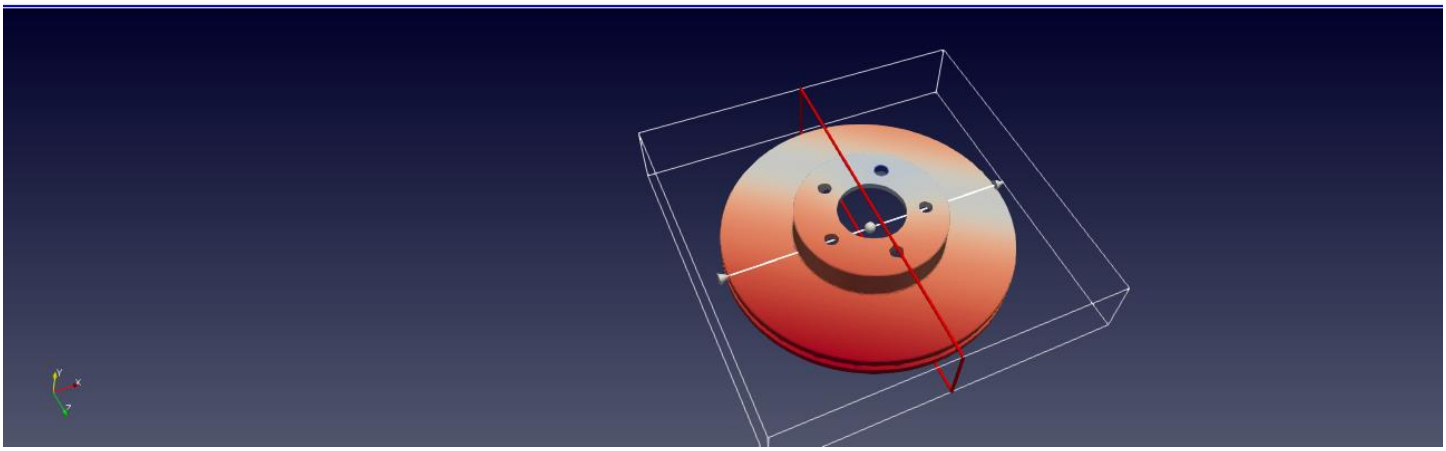
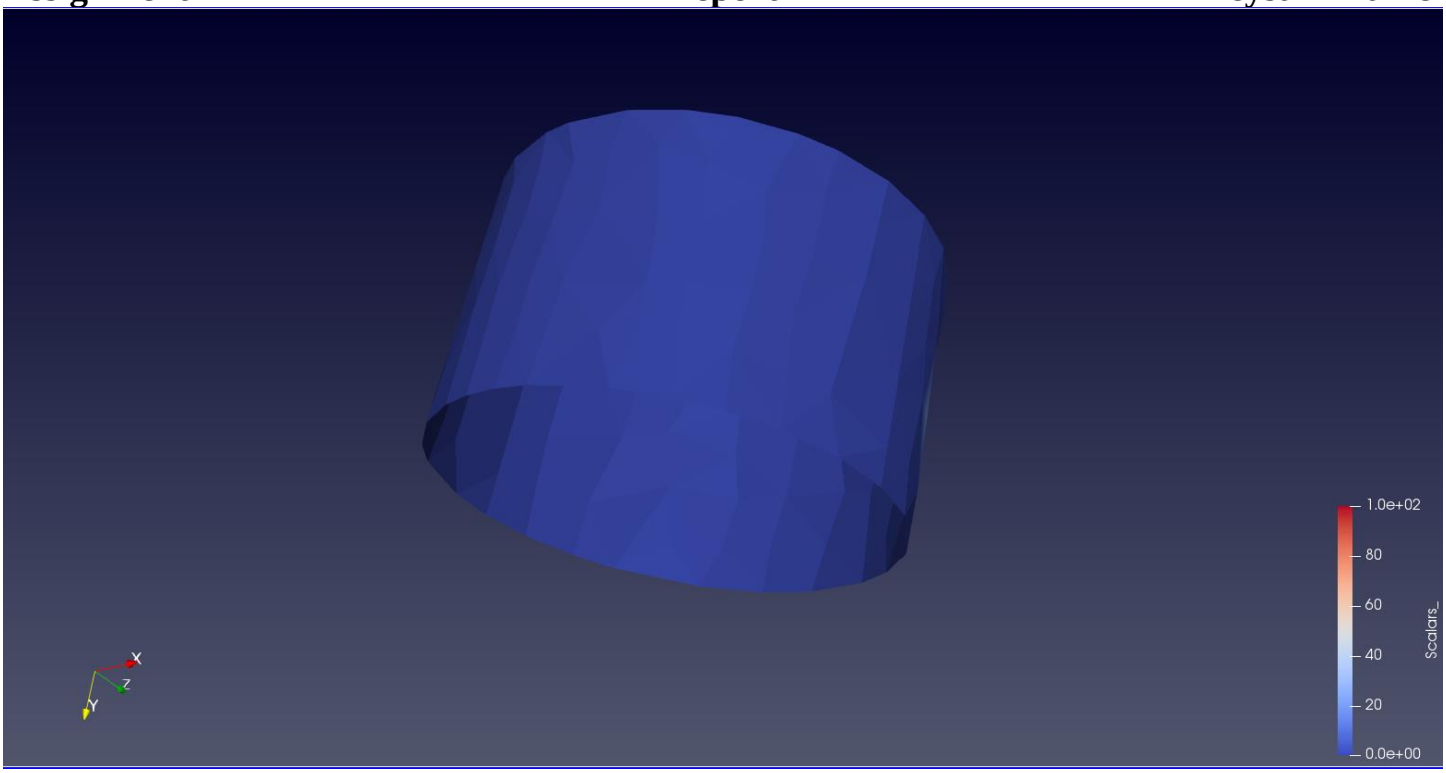
0.0e+00
Scalars_






1.0e+02
80
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40
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0.0e+00
Scalars_
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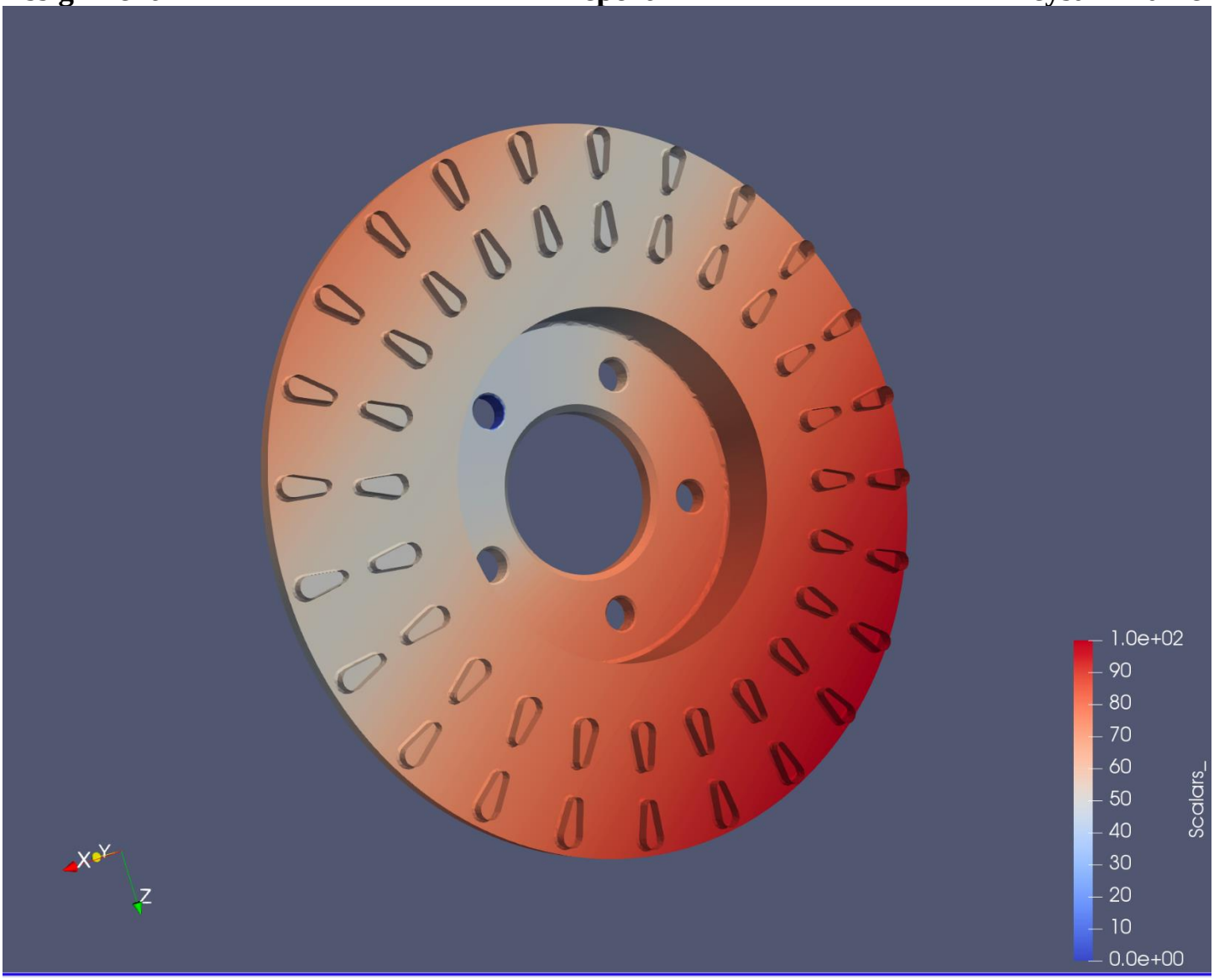
Y

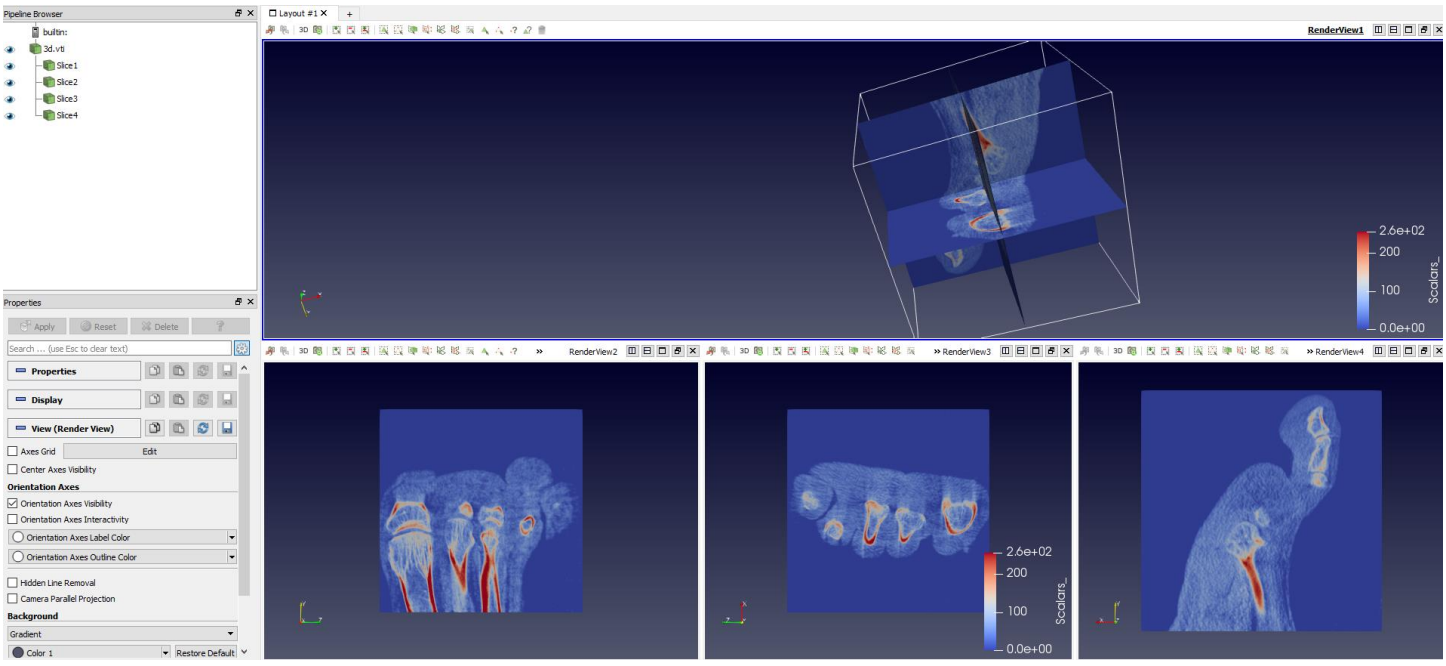


Min = 0

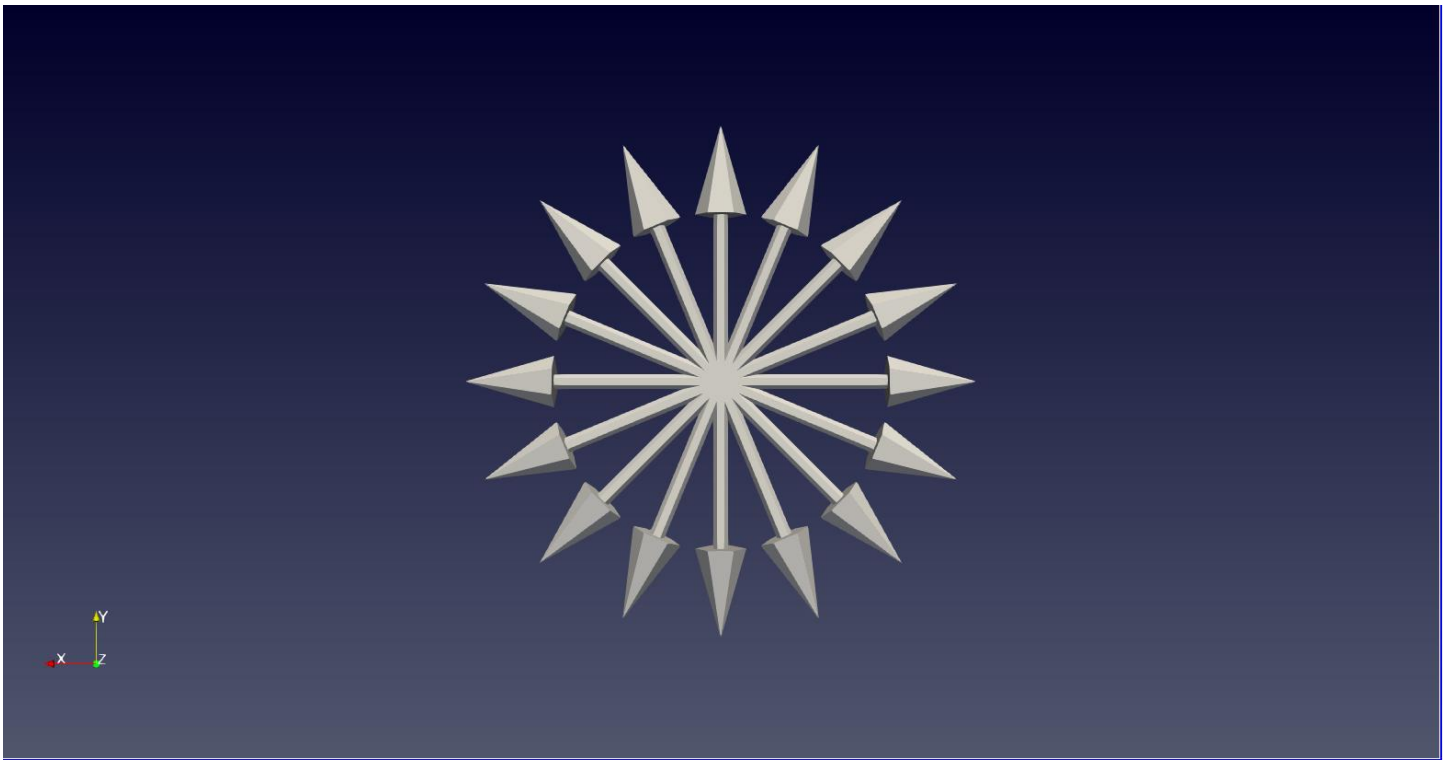
Max = 42

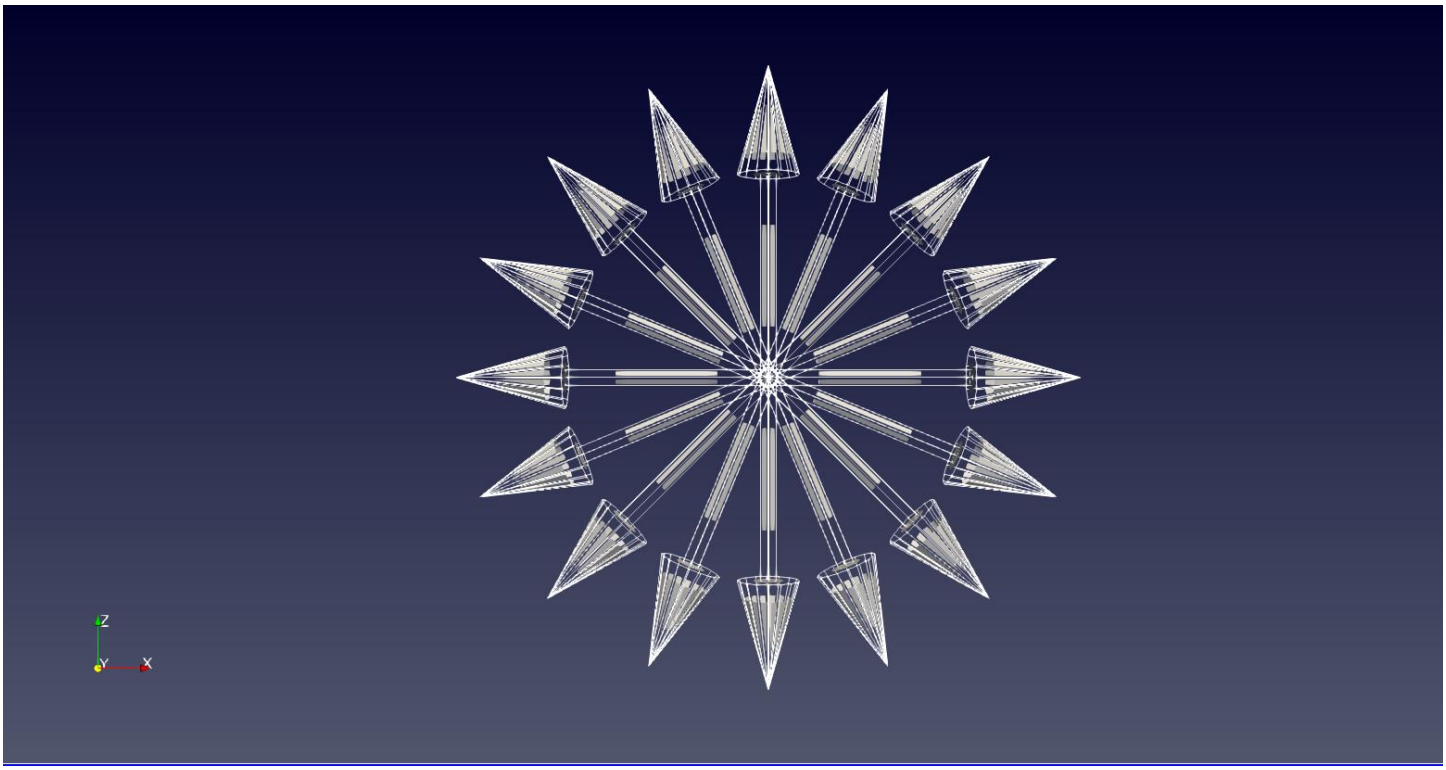
Q4)

Visualization of 3D Images

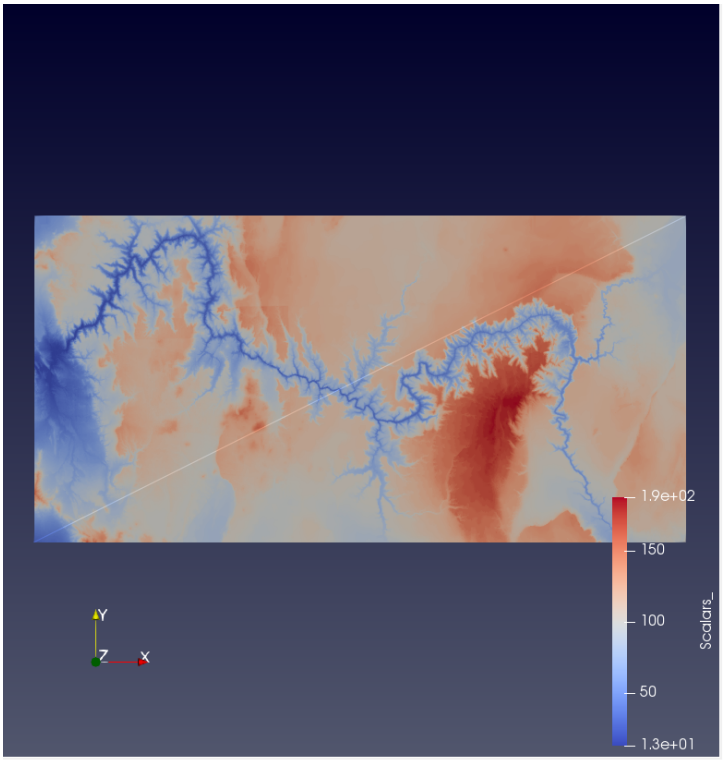


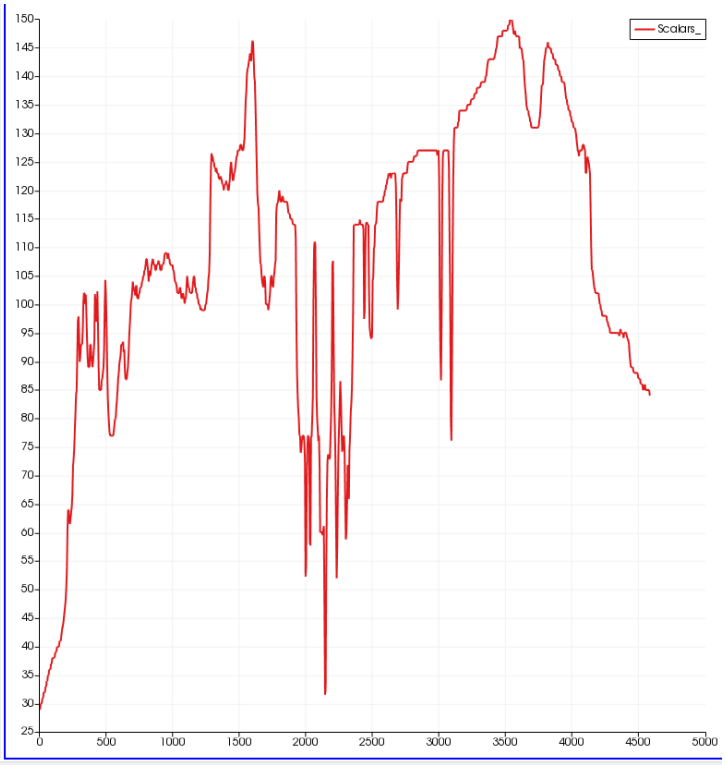
Part2: Code with Python Script

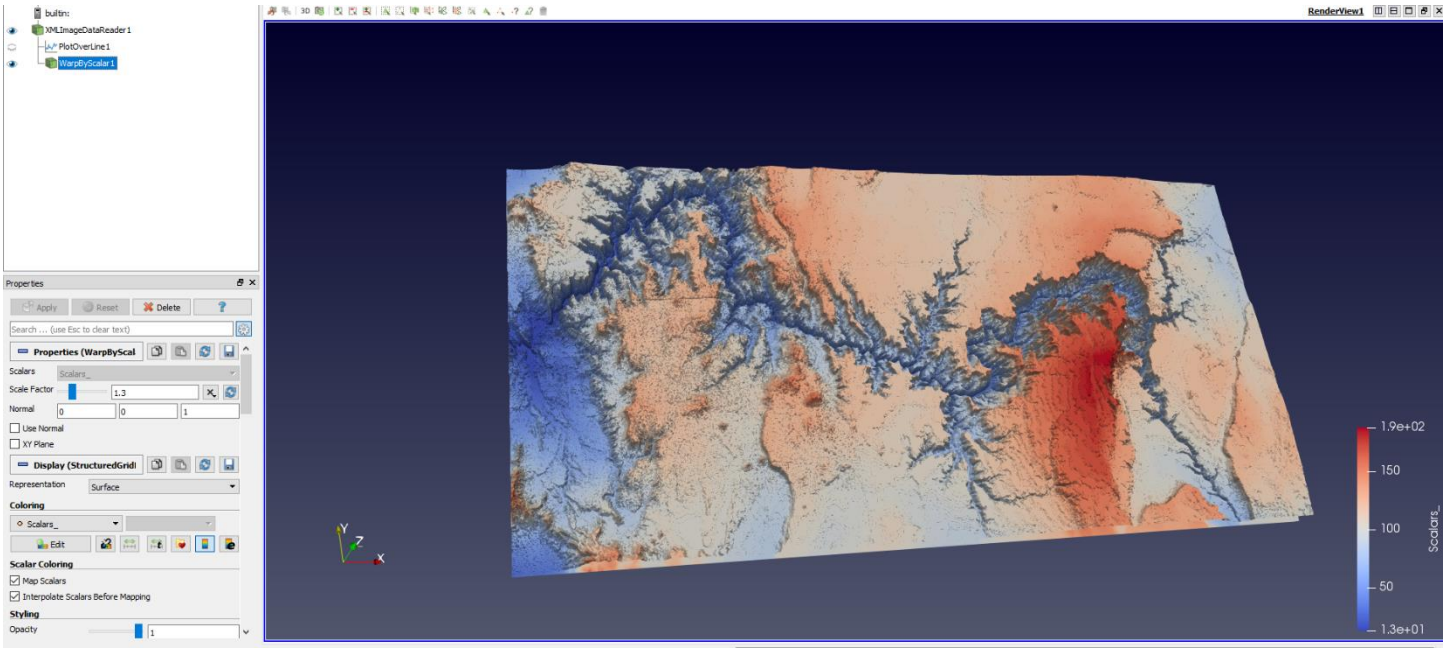




Read file and process it with Python scrip







I used WarpByScala by Filiter to produce 3d map.

Conclusion:

It was a great and interesting project, I learned a lot. Now I know how can I use different filter on my model in addition to that I learned how to manipulate my data in order to create a nice graph. I had a hard time for using a clip on cylinder question and I spent to much time on last question to how can read file and process it with python.

References:

https://www.paraview.org/ParaView/Doc/Nightly/www/py-doc/paraview.simple.html

https://www.paraview.org/ParaView/Doc/Nightly/www/py-doc/paraview.simple.WarpByScalar.html

https://www.paraview.org/Wiki/ParaView