9. Upscaling in the Vertical Direction
- Well Logs Upscaling

9.1 Scale Up Well Logs

The scale up of well logs is an automatic process with some user settings available. When scaling up the well logs Petrel will first find the 3D grid cells that the wells penetrate. For each grid cell all log values that fall within the cell will be averaged according to the selected algorithm to produce one log value for that cell. The resulting 3D grid will only hold values for the 3D grid cells that the wells have penetrated.

How you can upscaling the logs:

- Choose **Property Modeling** item from **Process Diagram**,  
- Double click on the **Scale up well logs** process,  
- In the Scale Up Well Logs Process dialog use the Create new Property option,  
- Select the wells to be included in the process,  
- Select the porosity log as the Log to be used,  
- Define Scale Up Settings. Arithmetic as average Method, treat the log As lines and use Neighbor cell as Method,  
- Press OK to create the property model,  
- See Fig. 9.1

![Fig. 9.1: Scale up well logs dialog box](image)
• Repeat the Upscale steps again for permeability and Fluvial facies logs.
• Under the Models tab check the Properties folder that new properties have been created. Display them in the 3D window.
• See Fig. 9.2

Fig. 9.2: Properties of Porosity [U] displayed in a 3D window with wells A16, B8, C1, C2, C4, and C5.
9.2 Statistical Check of the Scaled Up Well Logs

1. Open the Setting dialog for any content of property folder by double clicking on a selected property model icon and select the statistics tab as shown in Fig. 9.3

2. Observe the various the statistical parameters.

![Fig. 9.3: Settings for 'Porosity' dialog box](image)

3. Select the Histogram tab to generate the histogram of the raw log and the scaled up well log and also the up scaled cells as shown in Fig. 9.4

![Fig. 9.4: Histogram for the "Porosity" in property folder](image)