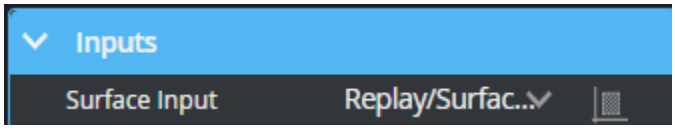
Surface Plane Advanced

Purpose

The Plane Advanced tool provides measurements that report a best-fit plane's key features, e.g., normal and flatness.

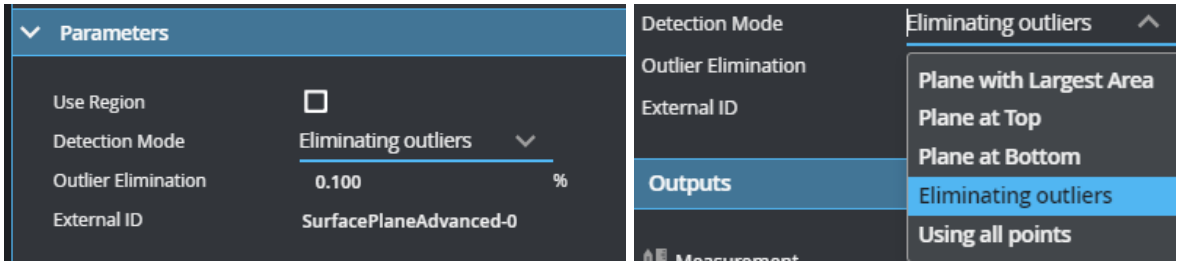
Compared to the Surface Plane tool (Surface Plane Tool User Manual), this advanced version is more robust and is not overly dependent on the location of ROI due to a different algorithm, as shown in the above images.

Inputs



Name	Description
Surface Input	The surface data (point cloud or uniform) that the tool will apply measurements to.

Parameters

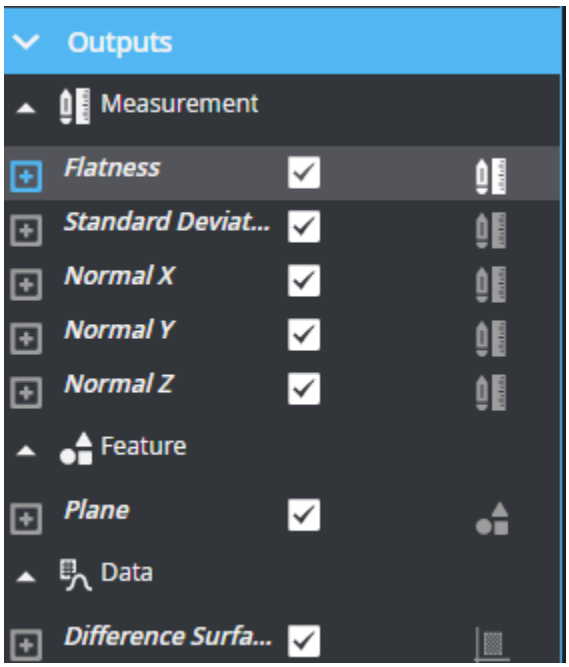


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Use Region	When enabled, show a Region parameter.
Region	The region to which the tool's measurements will apply.
Detection Mode	The plane detection mode. One of the following: **Largest Area** **Plane at Top** **Plane at Bottom** Use these options when more than one plane fit is possible in the region. **Eliminating outliers** Uses all data points of the scan data in the region, with some points with a maximum distance to the best-fit plane being considered as outliers, and excluded from the calculation. **Using all points** Uses all data points of the scan data in the region.
Outlier Elimination	This parameter is only related to the measurement output **Flatness** which is very sensitive to outliers. In detail, after we get the best-fit plane, the parameter will provide a way for the users to remove some points with a maximum distance to the best-fit plane being involved in the **Flatness** calculation

Outputs



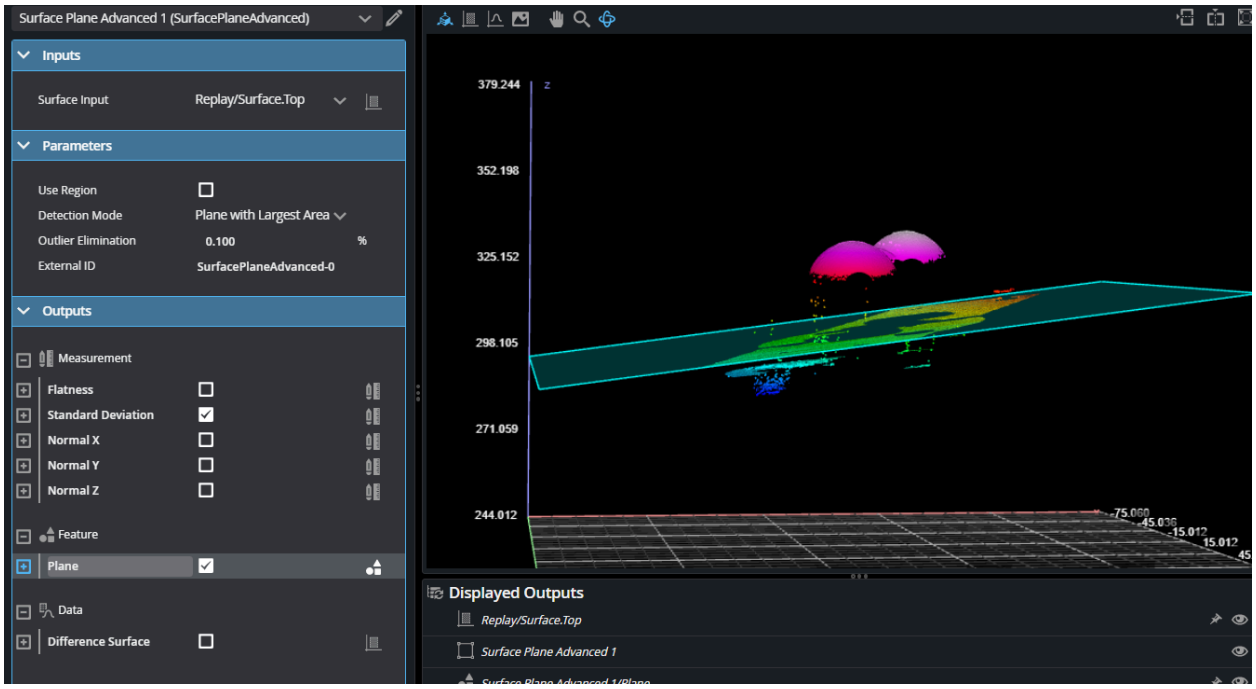
Type	Name	Description
Measurement	Flatness	Flatness of the valid points to the best-fit plane
Measurement	Standard Deviation	The standard deviation of the data points from the fitted plane.
Measurement	Normal X/Y/Z	Normal vector of the best-fit plane
Feature Plane	Plane	The best-fit plane
Uniform Surface	Difference Surface	Shows the fit error at each point of the plane.

Major Revisions (GDK 6.1.37.9)

- The name of this tool in Classic is “Surface Plane Fit”, in GoPxL, we decided to rename it as “Surface Plane Advanced”. This tool belongs to the Beta category.

- Removed the measurement “Processing Time” from GoPxL
- Removed the checkbox “Output Difference Surface” from GoPxL
- All the processed results are identical between the two versions.
- Speed performance is comparable based on [this test case] without adding any reason and using the tool default parameters.
    - GoPxL ~37.937ms/frame
    - Classic ~35.825ms/frame

Application Examples



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