

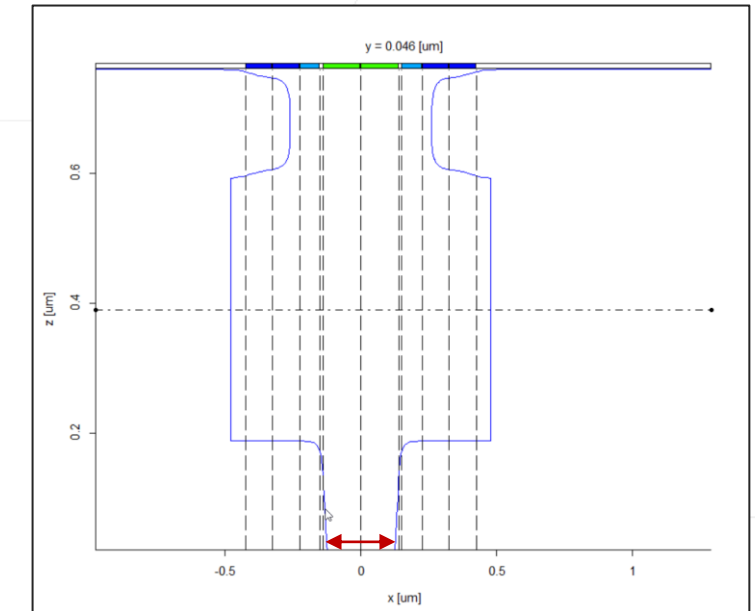
BEAMER

What's new 7.2

T-gate correction

The correction criteria has been adjusted to the bottom CD of the Tgate foot to ensure clearing of the resist (10% above the substrate interface).

This will change the correction results in BEAMER 7.2.



info

3D Settings:

3D Assignments:

Idx	Layer	Assignment	rel. Dose
0	1(0)	-----	0.4657
1	2(0)	-----	0.1306
2	0(0)	-----	1.0969
3	3(0)	-----	2.1938

Resist Process Time Factor (relative to contrast curve process of critical layer) = 1.0000

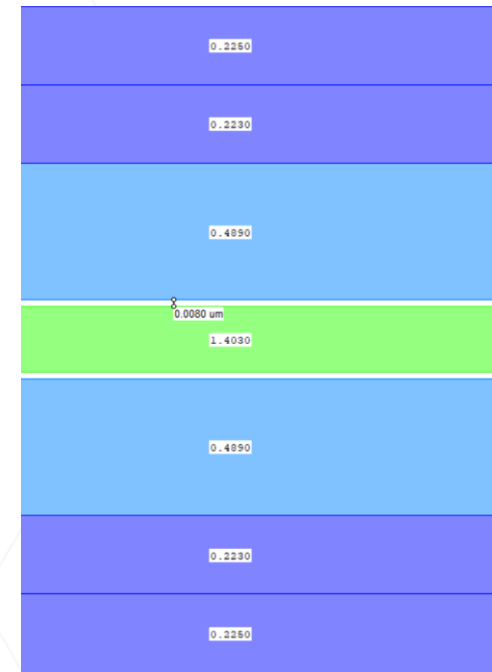
Equivalent Alpha[μm]: 0.057, Equivalent Beta[μm]: 2.512, Equivalent Eta : 1.145

Min. layout independent LR dose factor = 0.652

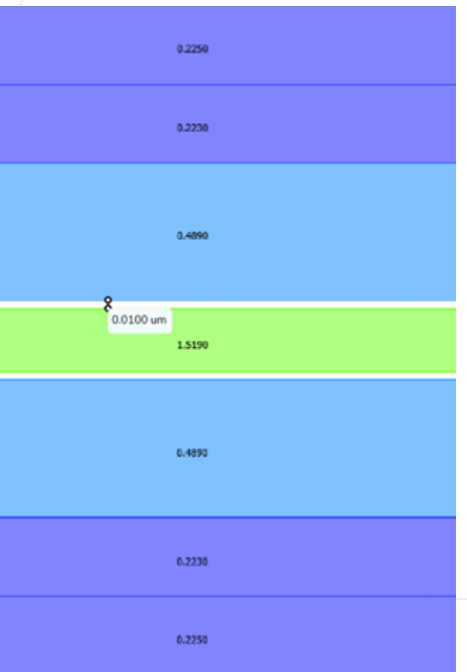
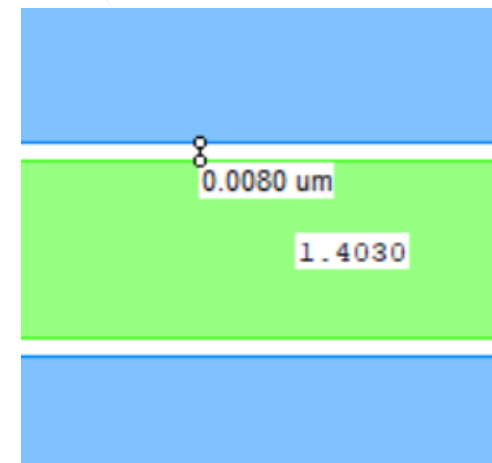
Number Doseclasses: 255

3D T-gate PEC: Contrast Curve data processing

- In the previous version, the default gate-PEC dose was equal to the dose to clear of the foot Contrast Curve, so the development time had to be slightly increased.
- It is now assumed that the CC and the T-gate PEC are performed with the same process, including time. This increases the default gate-PEC dose since we need a dose that fully develops through all layers within the same process time.
- In summary, the foot layer receives a higher dose making it consistent with the simulation.



BEAMER 7.1.0

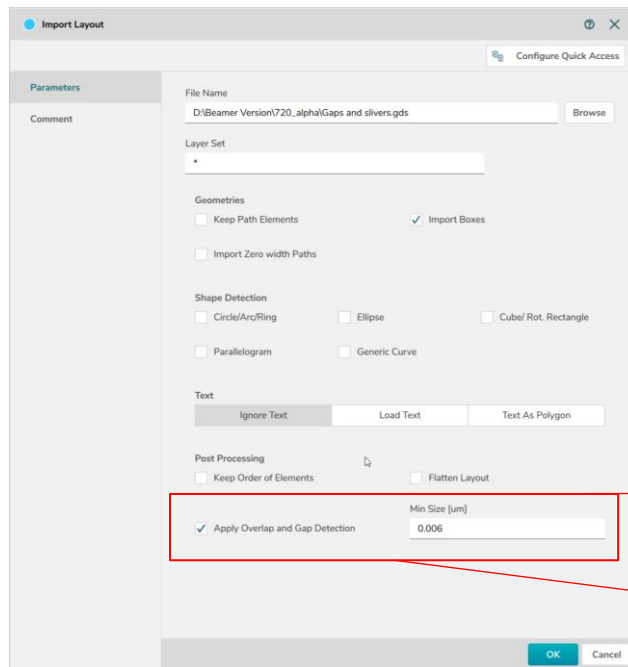


BEAMER 7.2.0

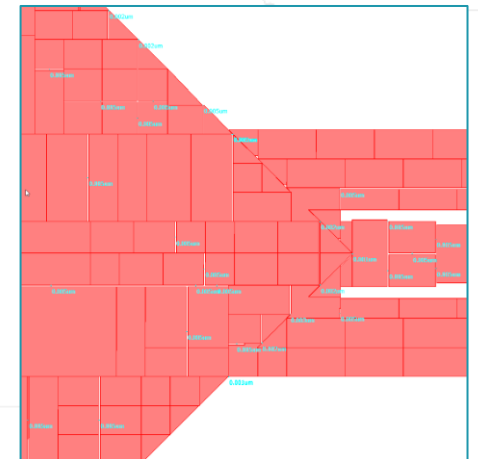
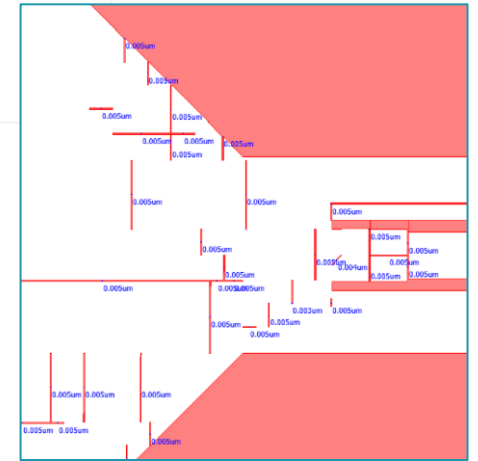
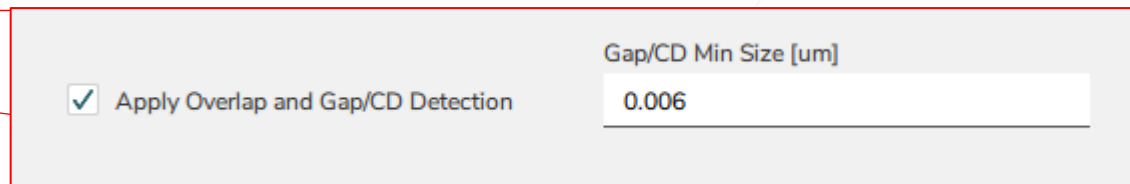
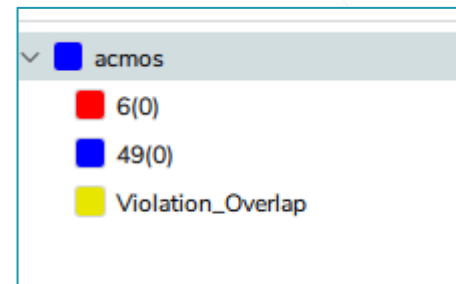
Pattern validation

Add functionality (view mode) to show gaps and slivers

*GDS and DXF Import new feature:
Small elements with unintended design issues (gaps and slivers) can be detected and highlighted in viewing mode.*

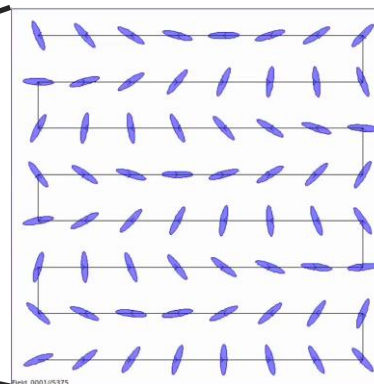
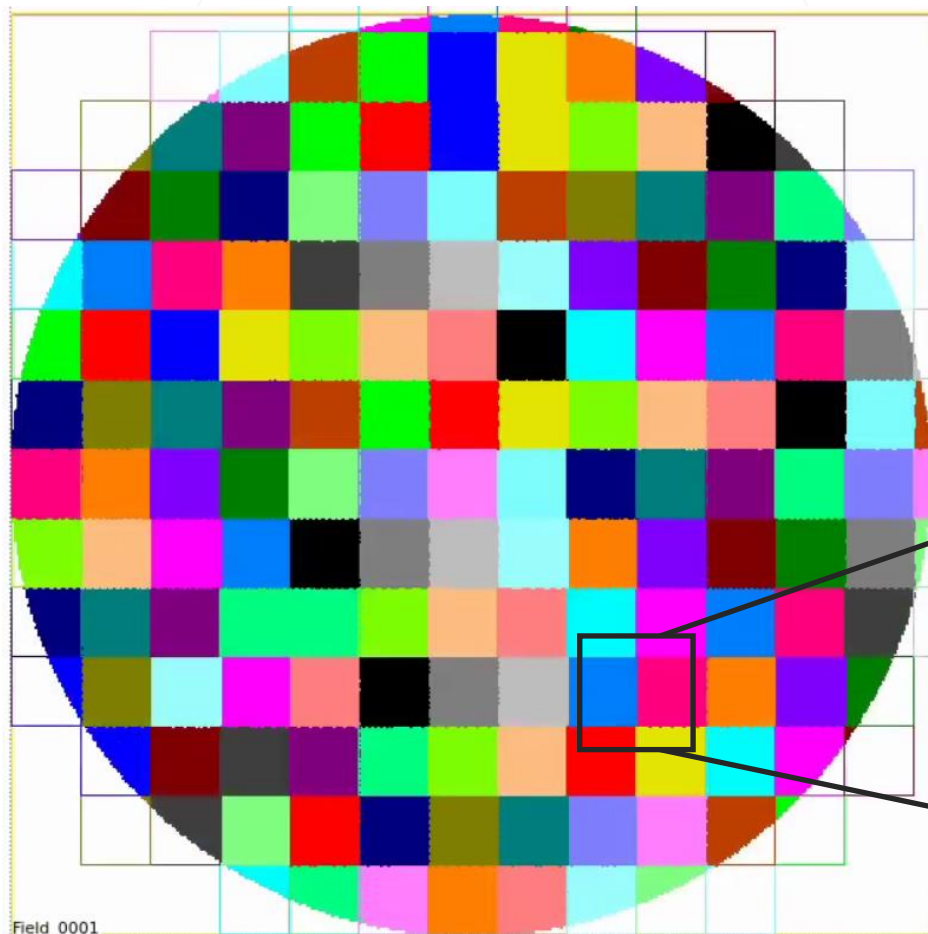


Additional *Layers* are created

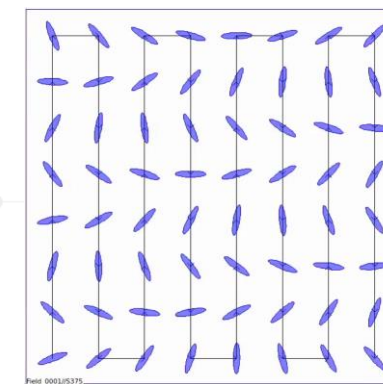


Field control

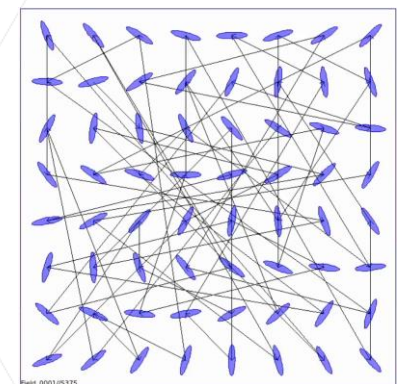
- BEAMER extends the writing field control down to the *Subfield* level using the **Manual Subfield** feature sorting, by applying a write sequence to the shapes within a subfield.



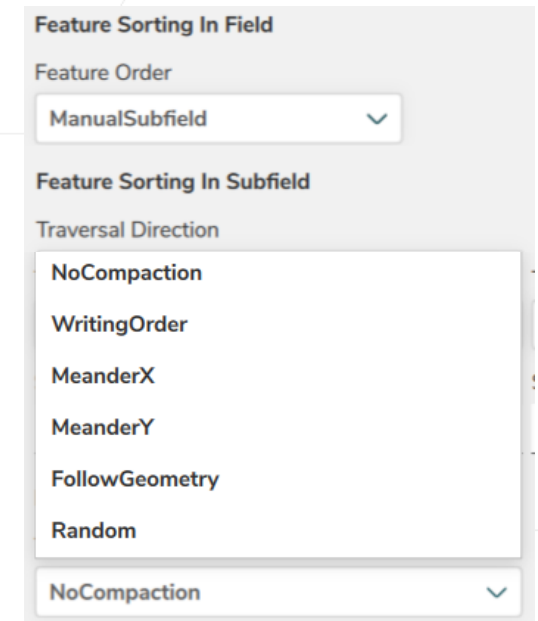
Meander X



Meander Y



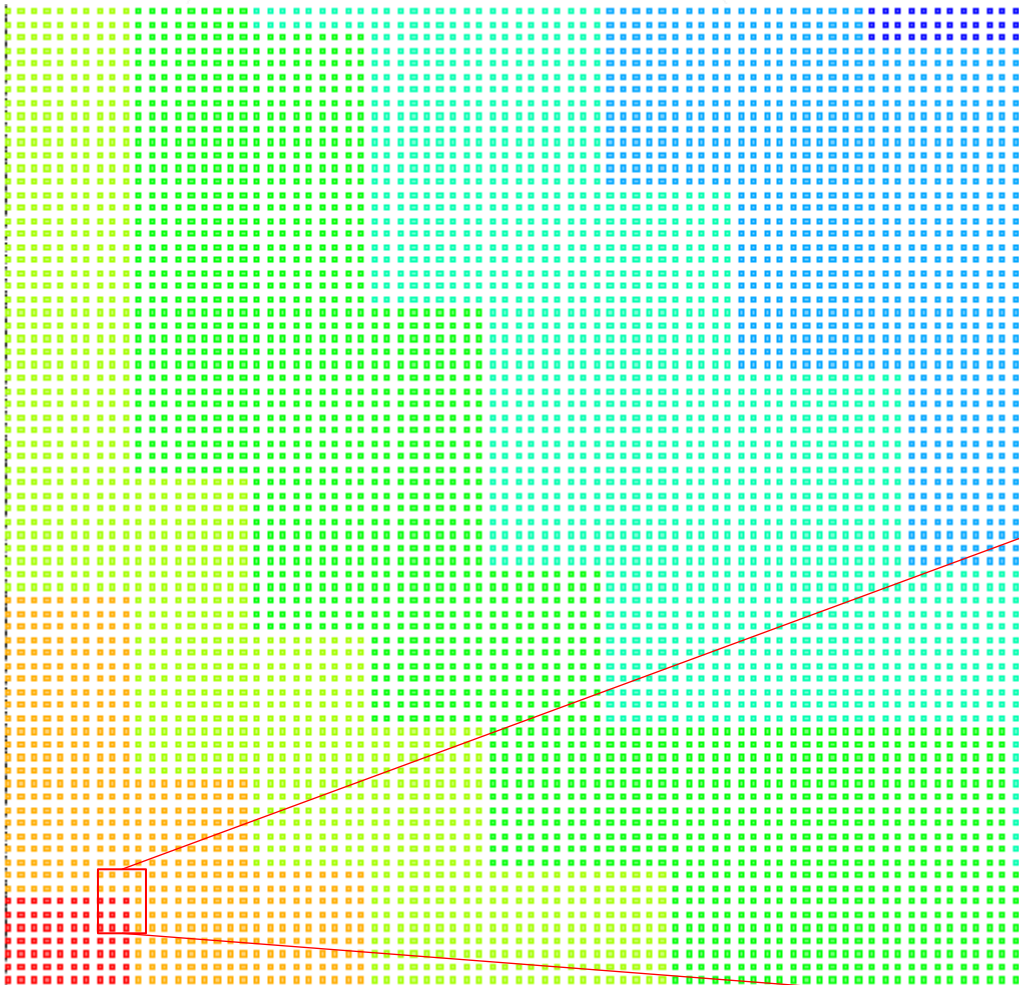
Random



Dose inheritance

REPLACE inherits dose from placeholder

REPLACE can now inherit the dose information of the element it is replacing and apply it to the input pattern.



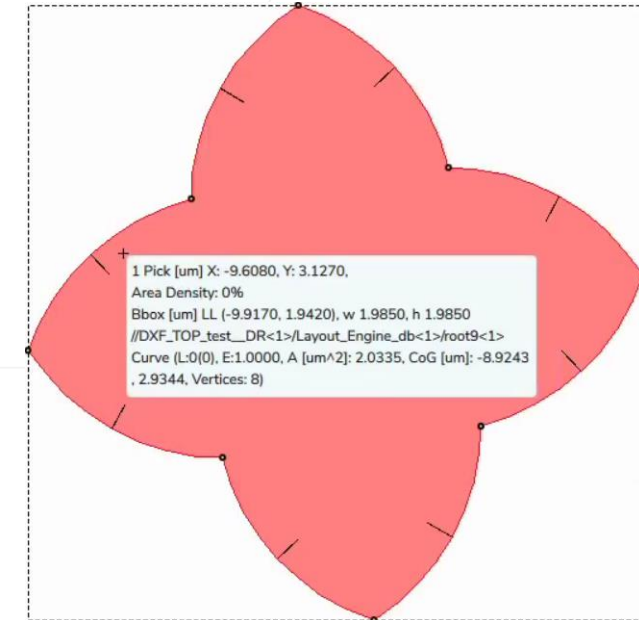
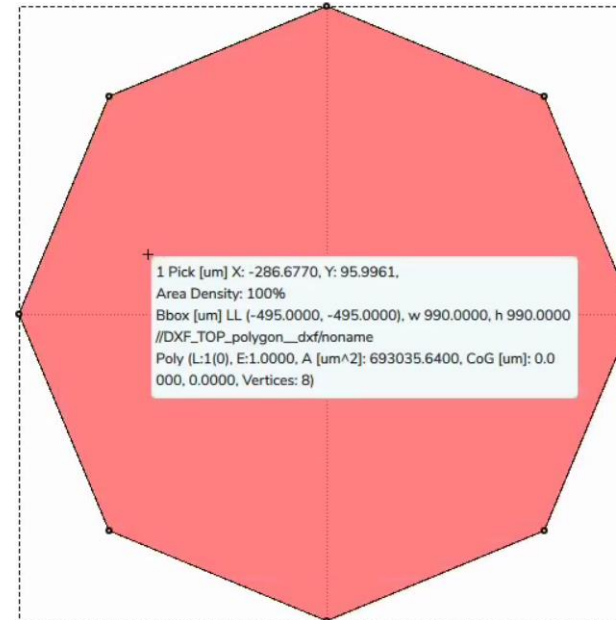
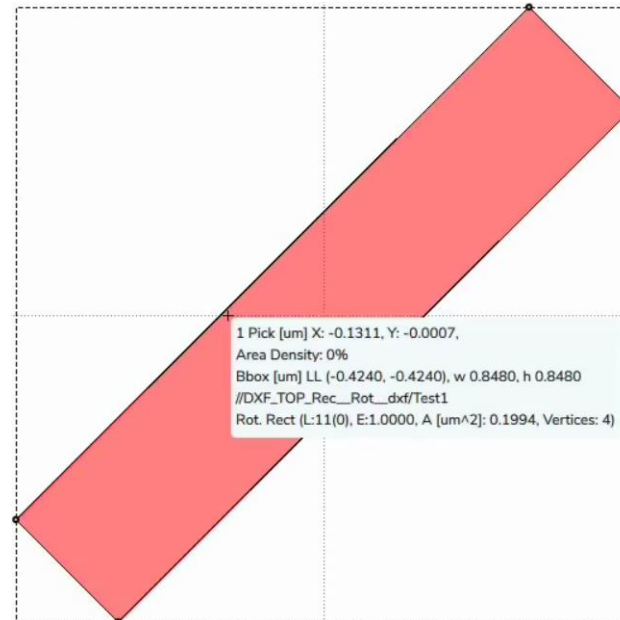
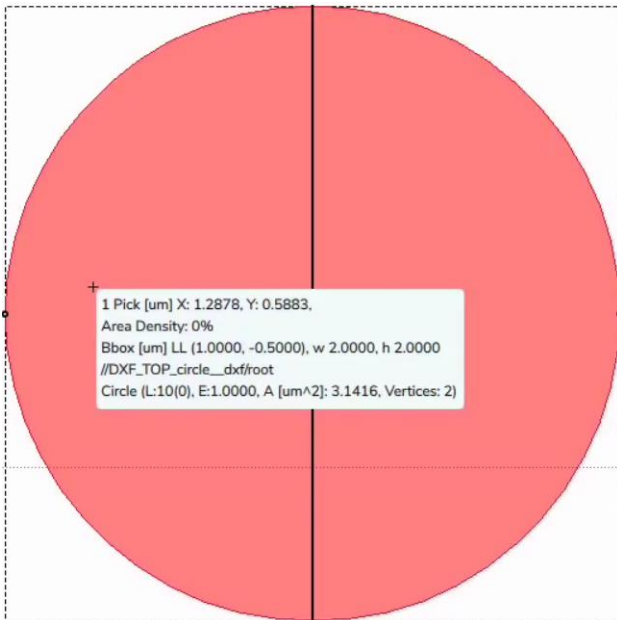
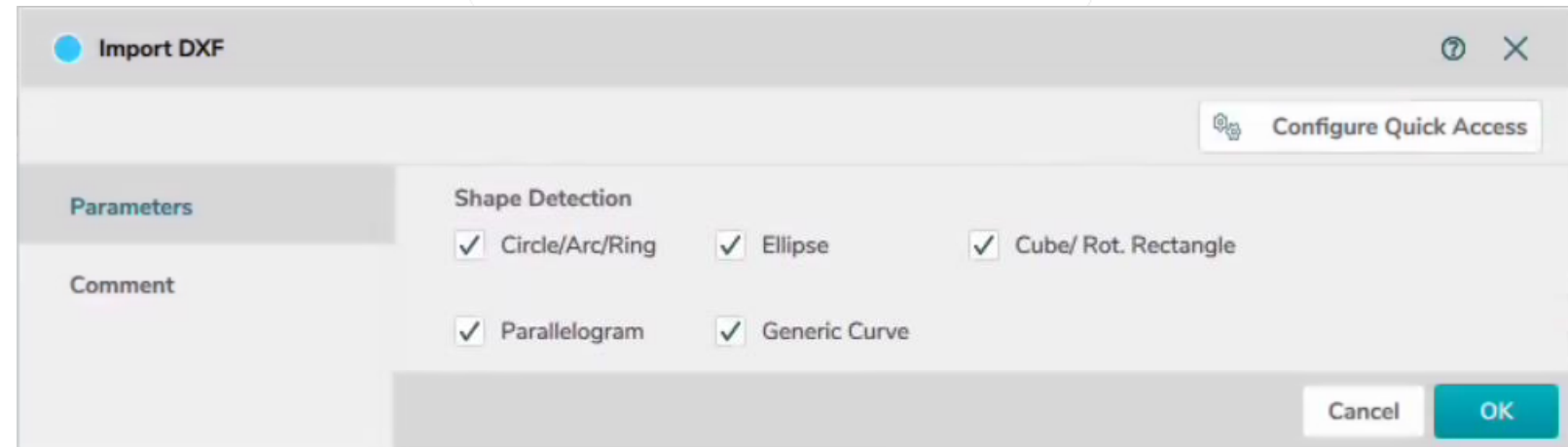
Replacement Type
Geometry Of Layers Replaced By Layout

Replace Settings
Layer(s)
1(0) Select...

☒ Apply Dose to Replaced Geometries

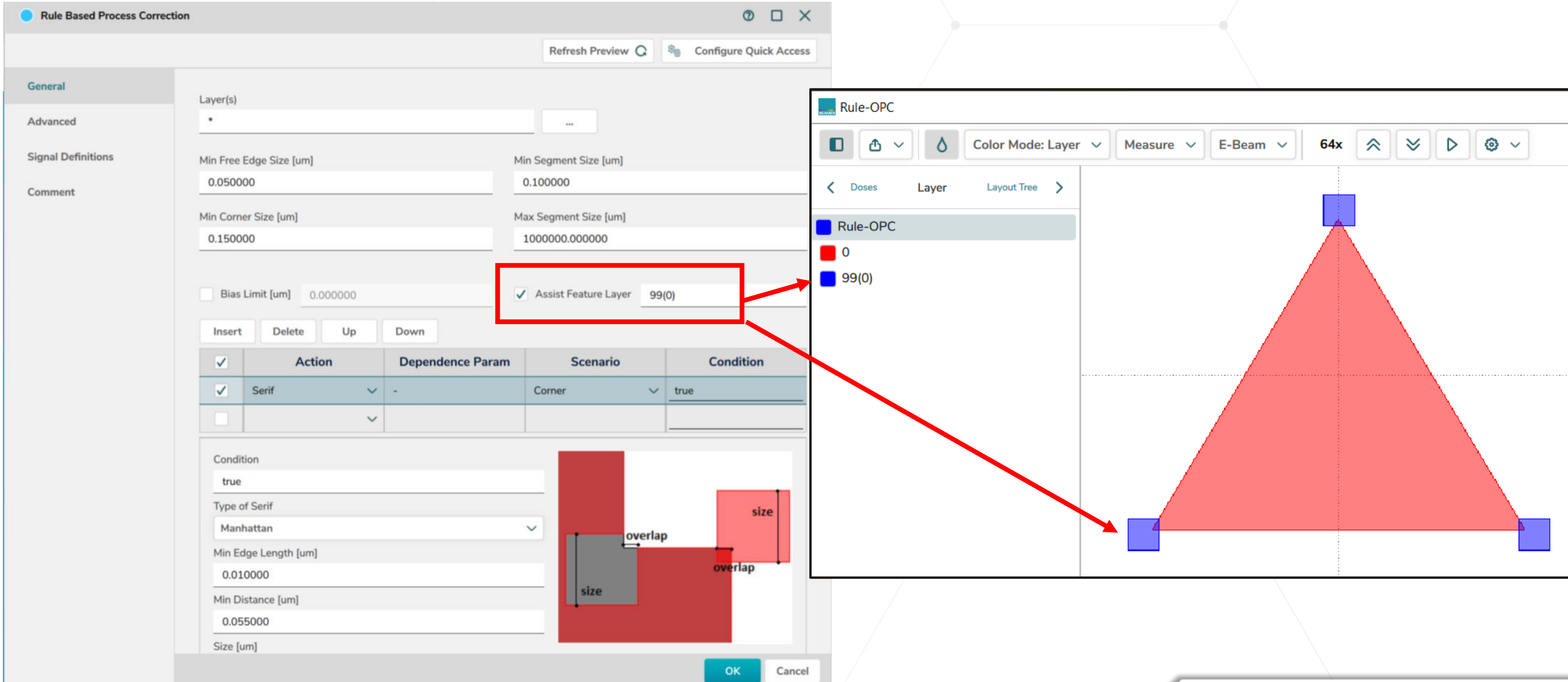
Shape detection DXF

DXF format increases its import settings to detect special shapes:
Circles, Rings, Arcs, Ellipses, Rotated Rectangles, Parallelograms and Generic Curves



Rule-OPC

- Rule-OPC can output the Assist Features (serifs,...) onto a separate layer



The screenshot displays the 'Rule Based Process Correction' (Rule-OPC) interface. The 'General' tab is active, showing various parameters for rule-based OPC. A red box highlights the 'Assist Feature Layer' checkbox, which is checked, and the layer name '99(0)' is entered in the adjacent field. A red arrow points from this field to the 'Rule-OPC' panel on the right, which shows a preview of the layout with a large red triangle and three blue squares at its vertices. The 'Rule-OPC' panel also shows a legend with 'Rule-OPC' (blue square), '0' (red square), and '99(0)' (blue square). The 'Assist Feature Layer' checkbox is also checked in the 'Rule-OPC' panel.

General Tab Parameters:

- Layer(s): *
- Min Free Edge Size [um]: 0.050000
- Min Segment Size [um]: 0.100000
- Min Corner Size [um]: 0.150000
- Max Segment Size [um]: 1000000.000000
- Bias Limit [um]: 0.000000
- Assist Feature Layer: ☒ 99(0)

Action Table:

✓	Action	Dependence Param	Scenario	Condition
✓	Serif	-	Corner	true

Condition Parameters:

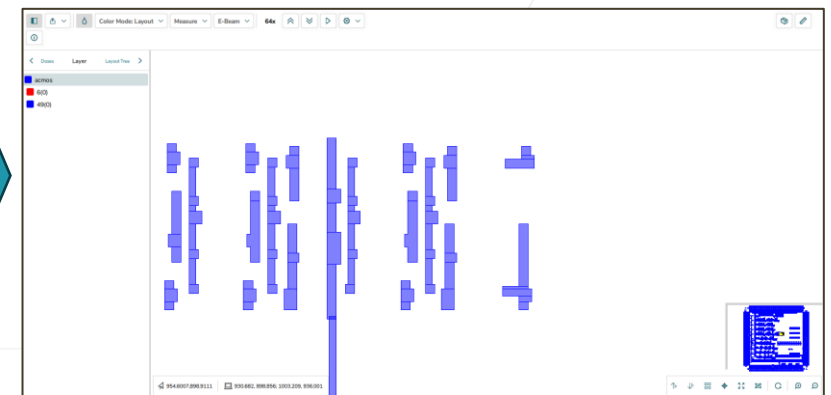
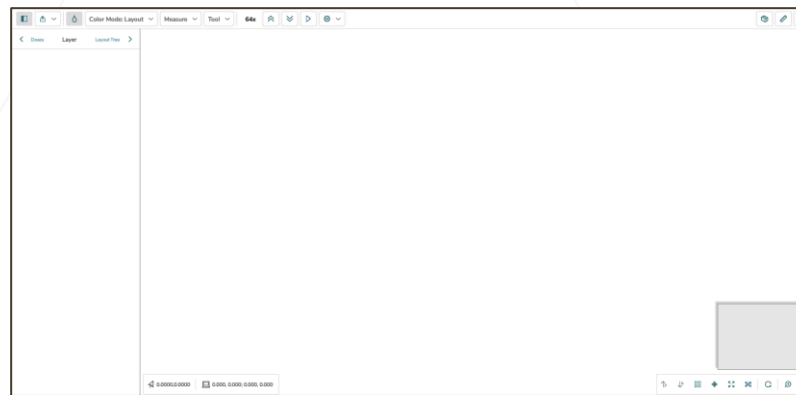
- Condition: true
- Type of Serif: Manhattan
- Min Edge Length [um]: 0.010000
- Min Distance [um]: 0.055000
- Size [um]:

Rule-OPC Panel:

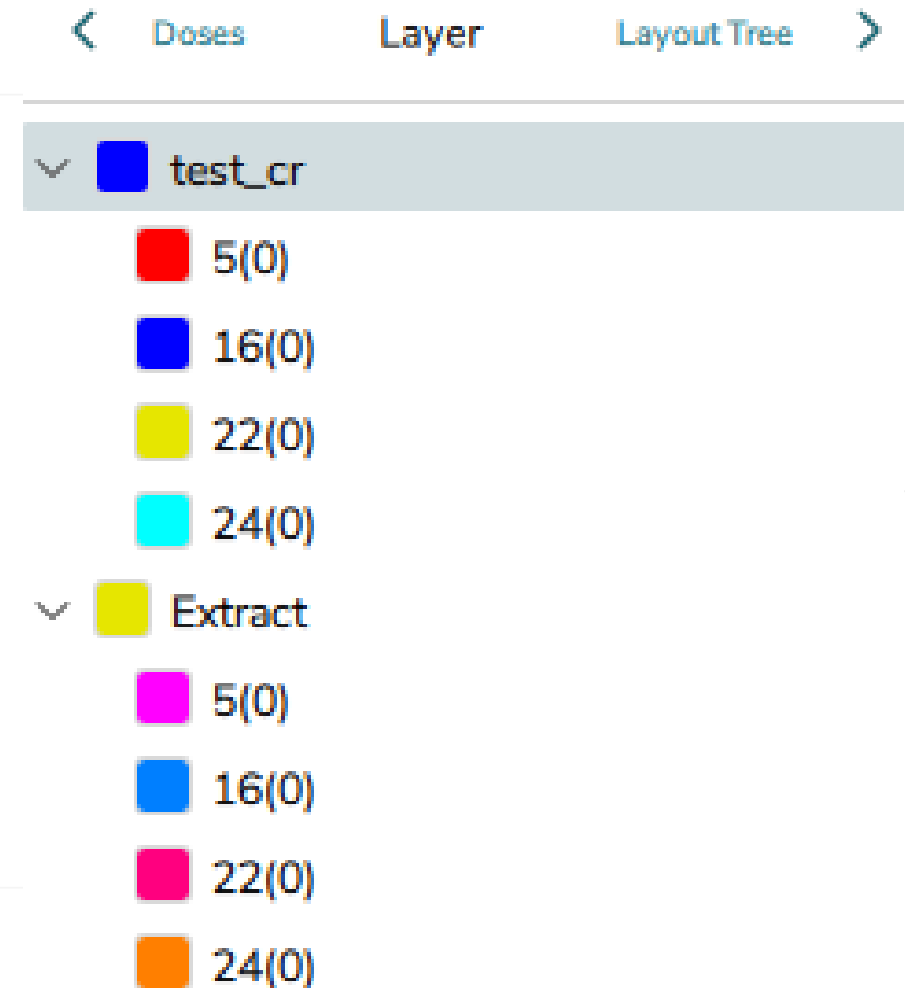
- Color Mode: Layer
- Measure
- E-Beam
- 64x
- Layer: Rule-OPC, 0, 99(0)
- Preview: A large red triangle with three blue squares at its vertices, representing the assist features.

VIEWER improvements

- The last zoom settings are saved
- Leaving the View of a module and returning to it restores the original view area settings

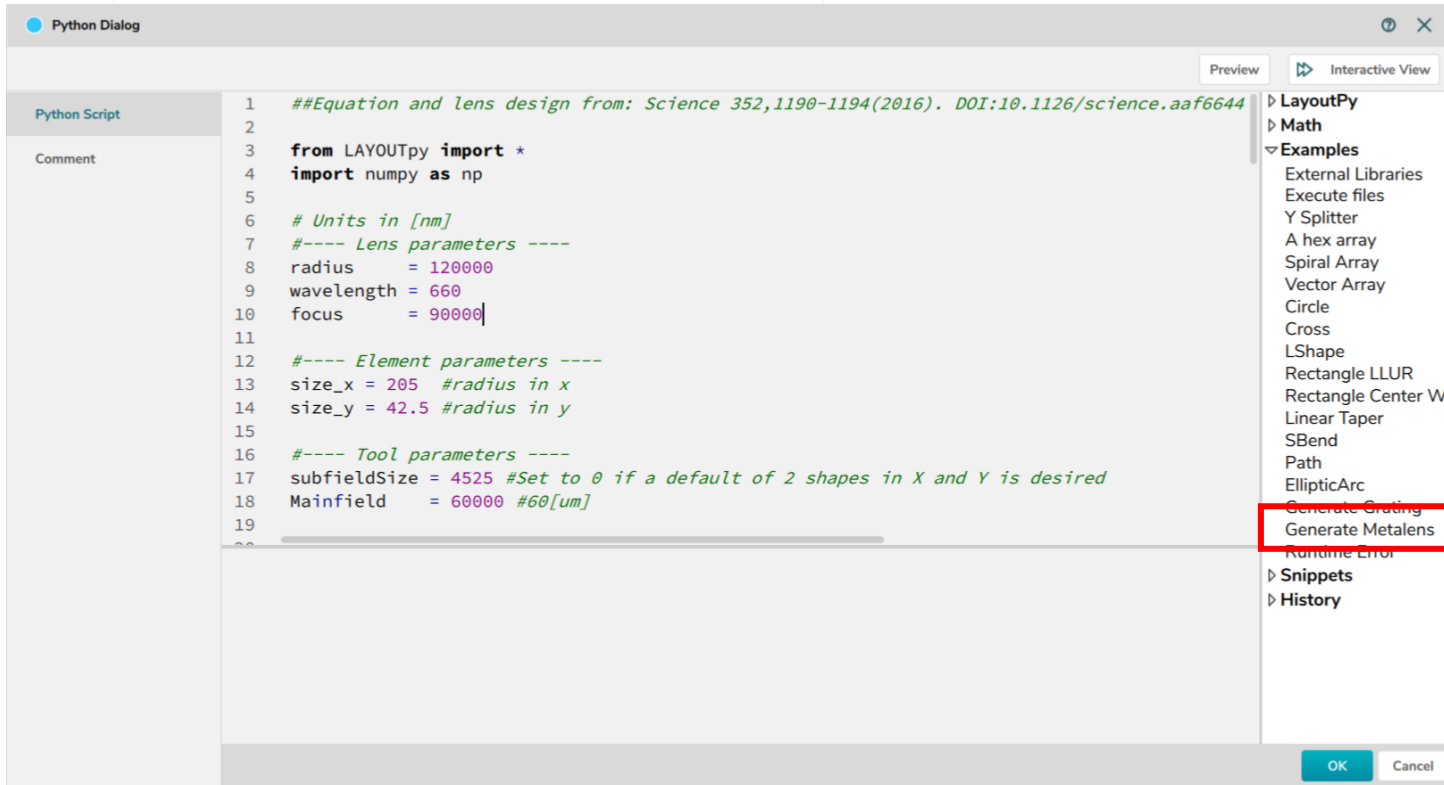


- Dose and Layer navigation now includes collapsible lists, making it easier to navigate a large number of layers and doses, especially when using Multiviews.



LayoutPy examples

- LayoutPy includes a simple example to create *Metalenses* for a desired wavelength and focal length and with optimised Field and Subfield ordering



The screenshot shows a 'Python Dialog' window with a 'Python Script' tab. The script defines parameters for a metalens layout, including units, lens parameters (radius, wavelength, focus), element parameters (size_x, size_y), and tool parameters (subfieldSize, Mainfield). A right-hand sidebar lists various LayoutPy examples, with 'Generate Grating' and 'Generate Metalens' highlighted in a red box. The 'Generate Metalens' option is selected.

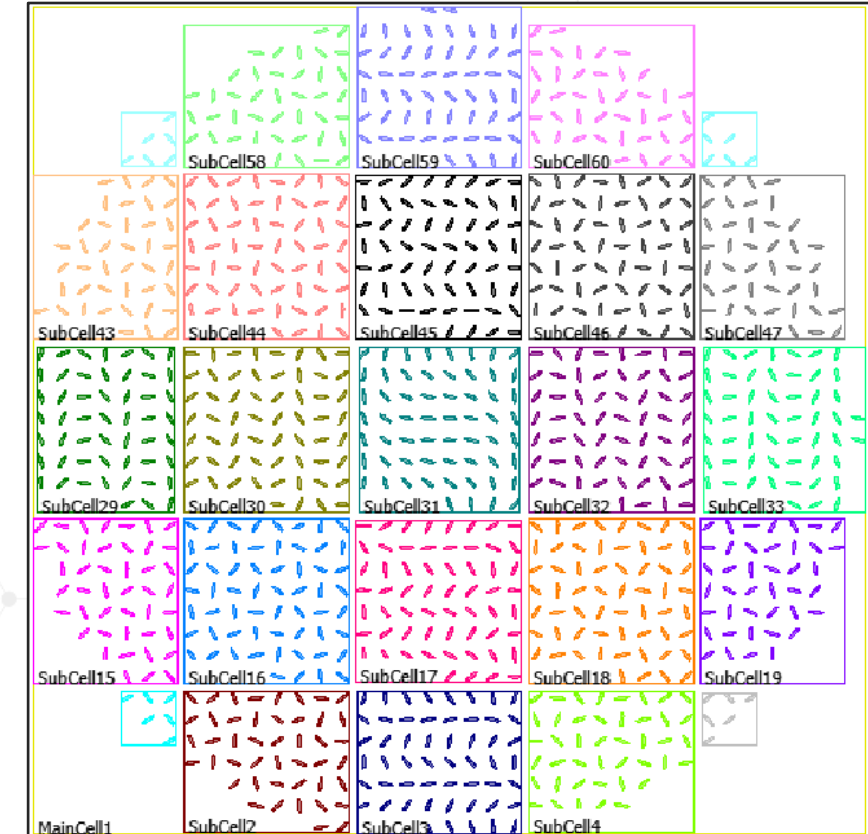
```

1  ##Equation and lens design from: Science 352,1190-1194(2016). DOI:10.1126/science.aaf6644
2
3  from LAYOUTpy import *
4  import numpy as np
5
6  # Units in [nm]
7  #---- Lens parameters ----
8  radius      = 120000
9  wavelength  = 660
10 focus       = 90000
11
12 #---- Element parameters ----
13 size_x = 205 #radius in x
14 size_y = 42.5 #radius in y
15
16 #---- Tool parameters ----
17 subfieldSize = 4525 #Set to 0 if a default of 2 shapes in X and Y is desired
18 Mainfield    = 60000 #60[um]
19
20

```

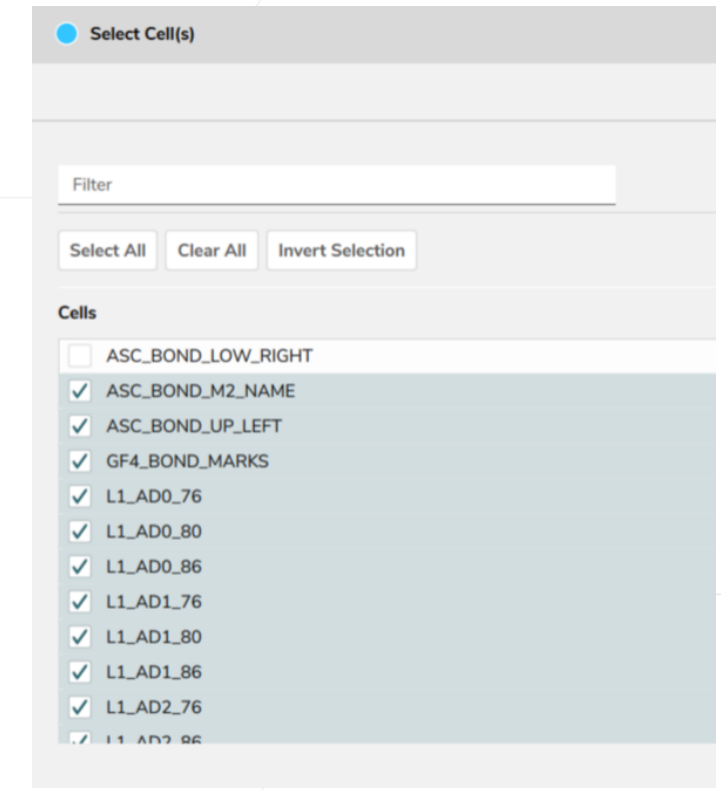
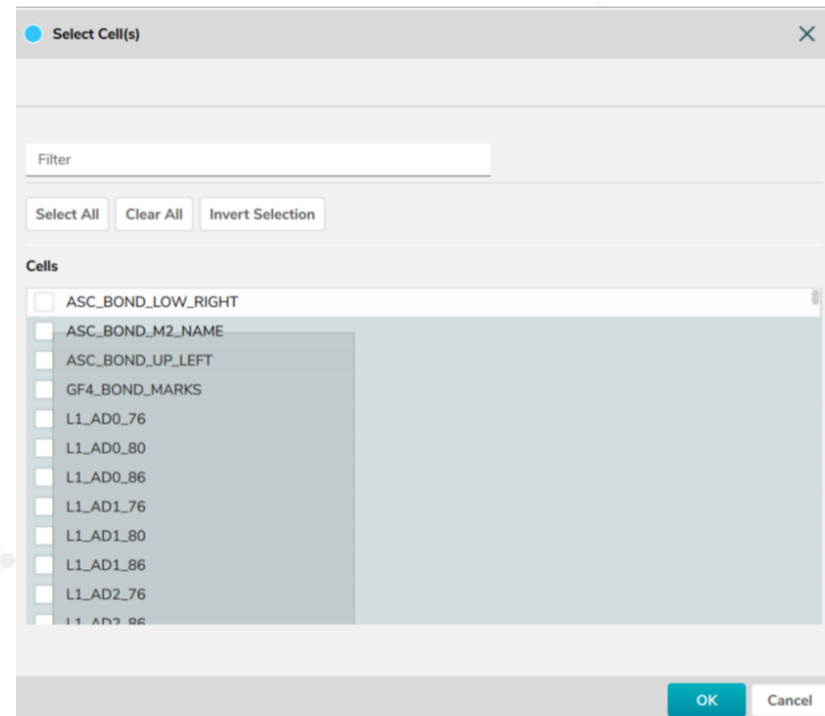
LayoutPy
 ▸ Math
 ▾ Examples
 External Libraries
 Execute files
 Y Splitter
 A hex array
 Spiral Array
 Vector Array
 Circle
 Cross
 LShape
 Rectangle LLUR
 Rectangle Center WH
 Linear Taper
 SBend
 Path
 EllipticArc
 Generate Grating
 Generate Metalens
 Random Error
 ▸ Snippets
 ▸ History

OK Cancel



UI Improvements

- The EXTRACT allows to drag a selection box on the opened Cells picker to multiselect cells

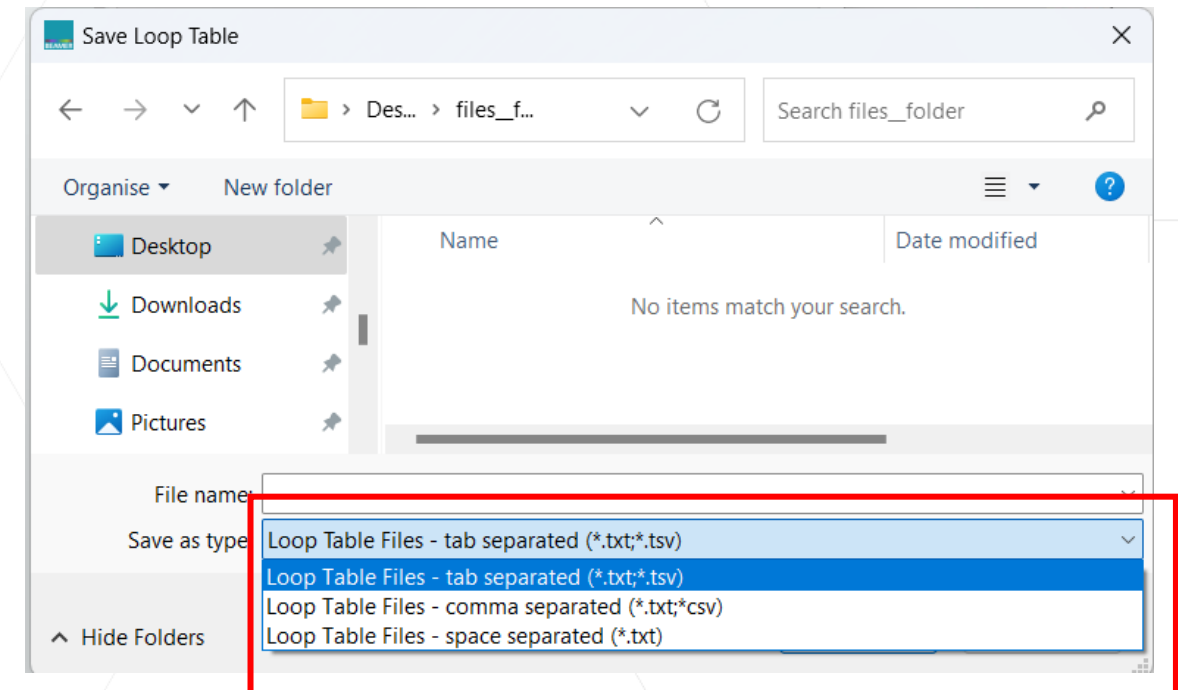
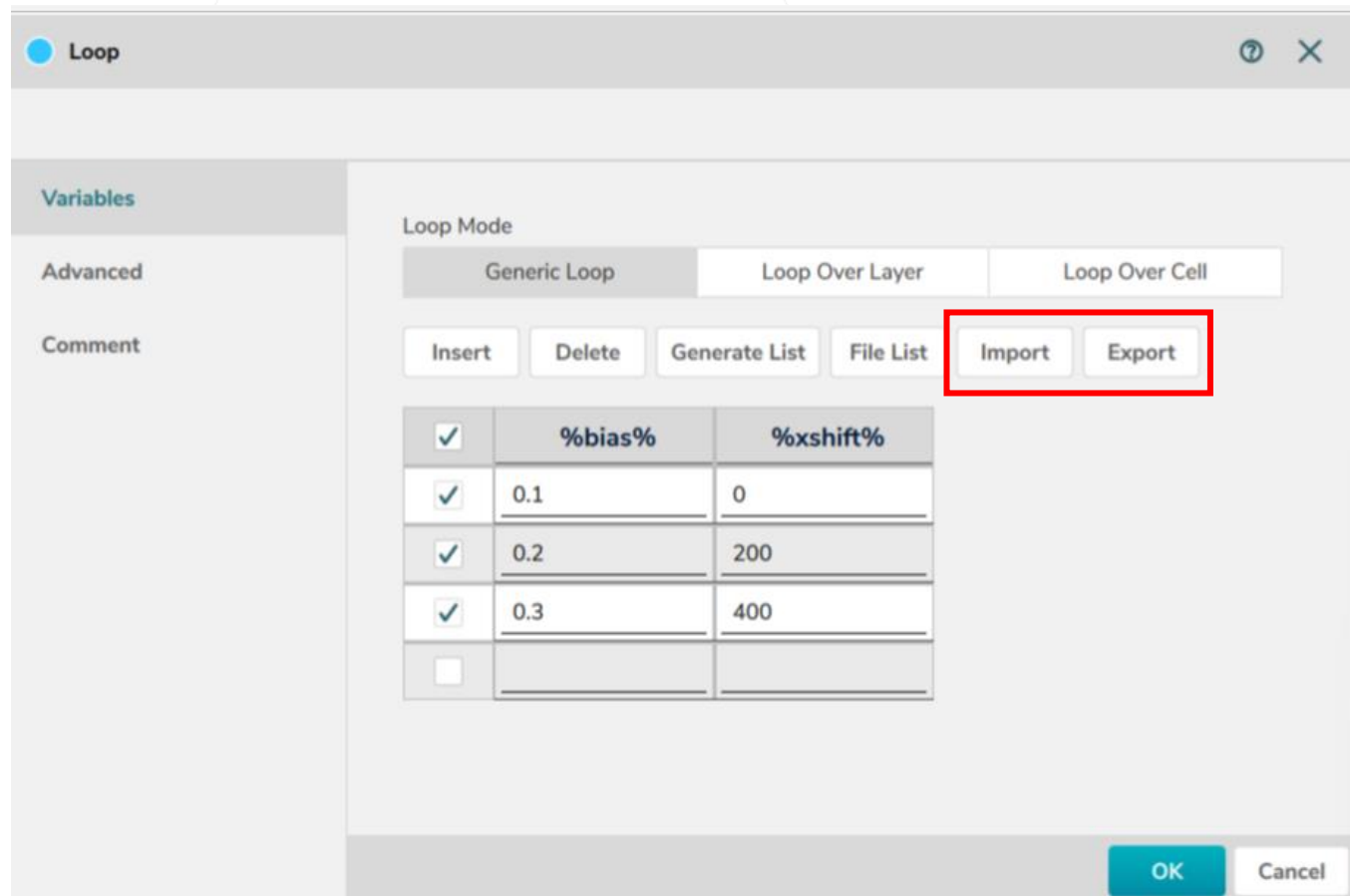


-



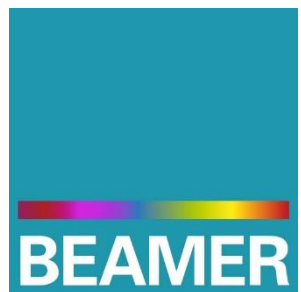
Comment boxes can now be resized

- The Loop module offers more formats during *Import* and *Export* of tables making it more versatile



Thank You!

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