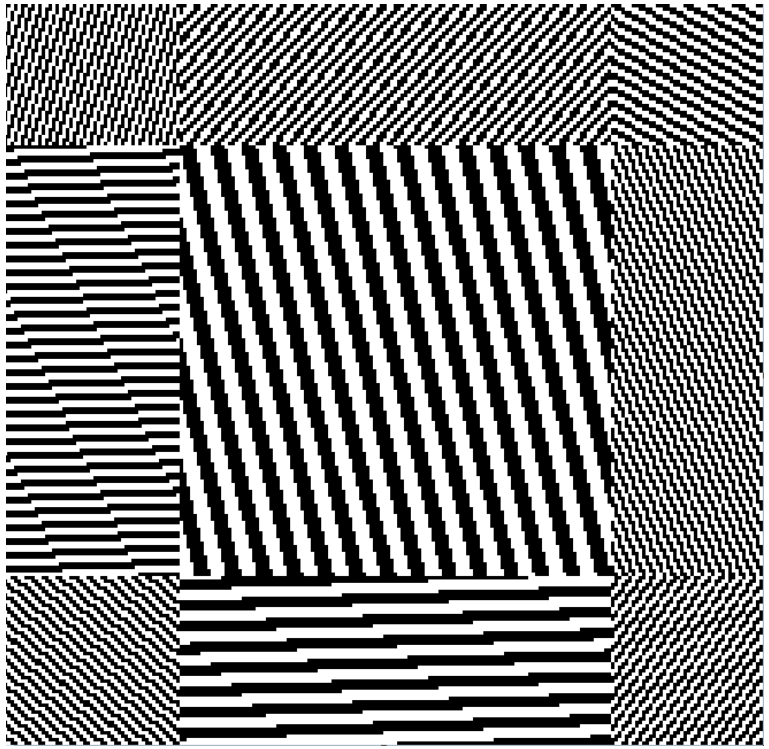
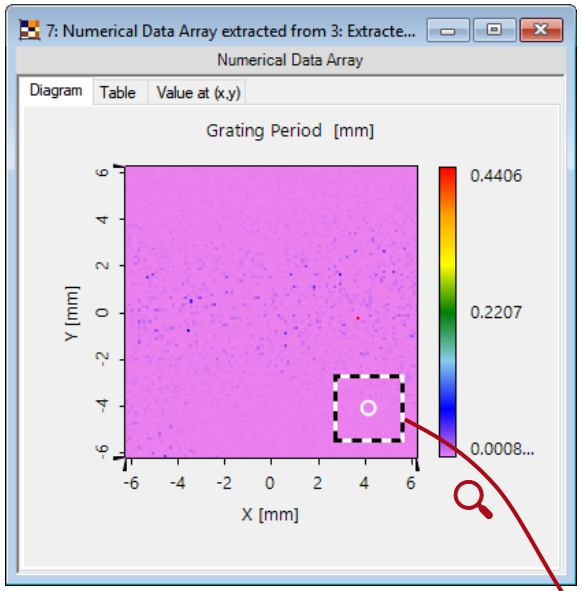
Export of GCA Data via Bitmap

Abstract



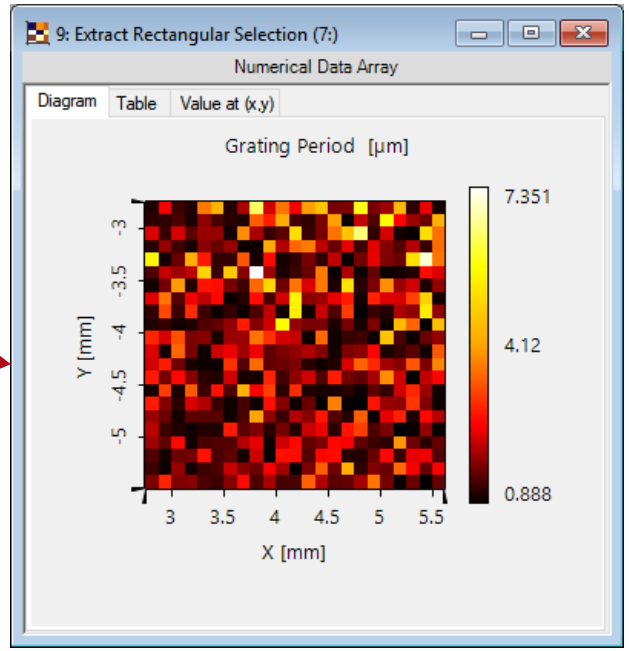
In this demo we will show how to export the data of a GCA design via bitmap file format to enable a common data interface to the fabrication technology. As an example, the module for generating a phase transmission is applied to the extracted part of the whole GCA design (for simplicity).

Problem Statement



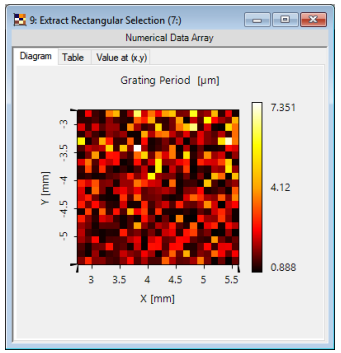
Standard GCA design in VirtualLab Fusion for Lighttrans Logo

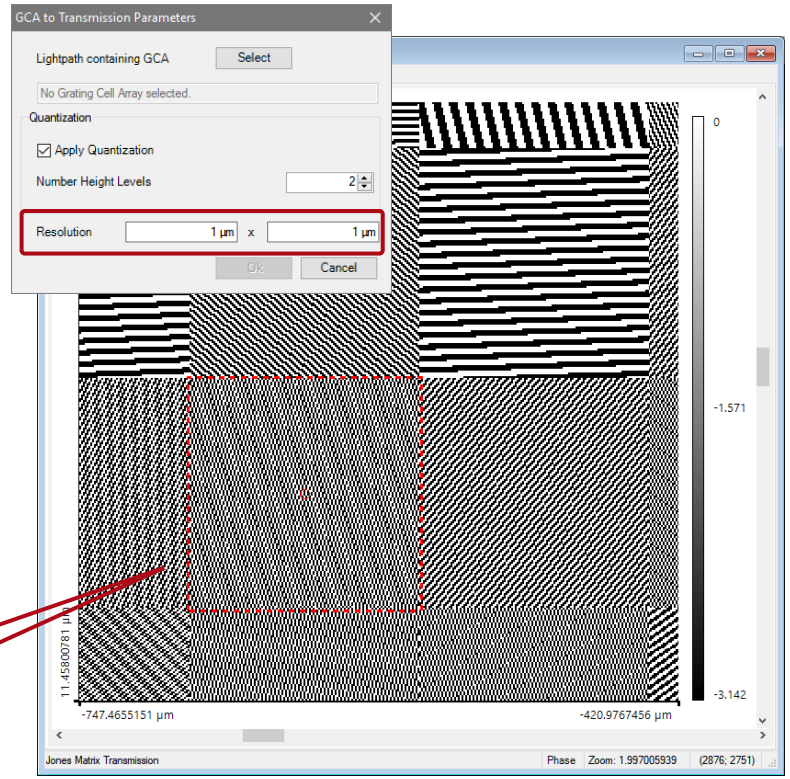
selected part of the GCA for better visibility



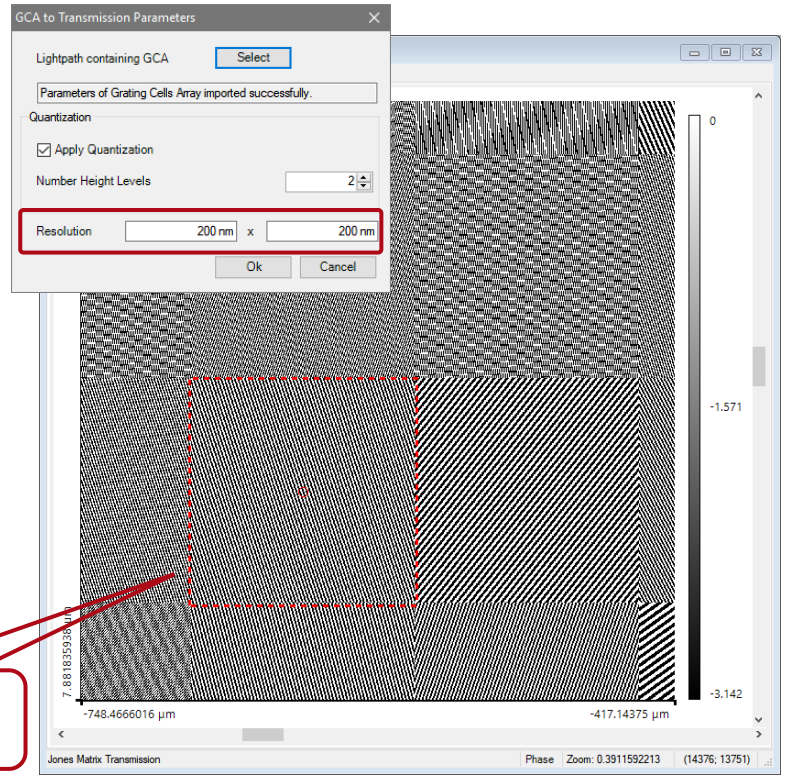
- as a task the data of a GCA design shall be exported via bitmap file format to enable a common data interface to the fabrication technology
- please note that already for the standard design of a GCA in VirtualLab Fusion the periods are smaller than 1µm!

Convert Data to a Phase Transmission Function





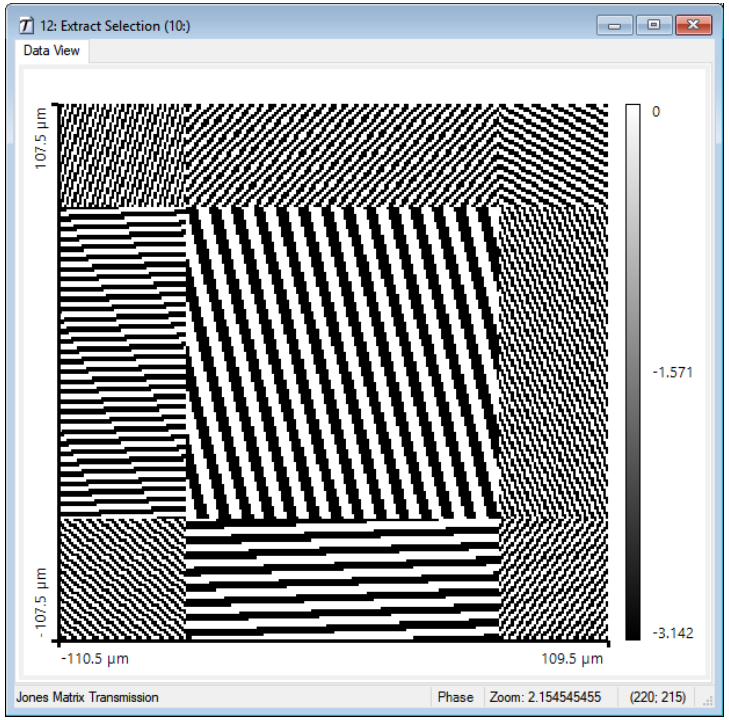
phase undersampled



phase not undersampled

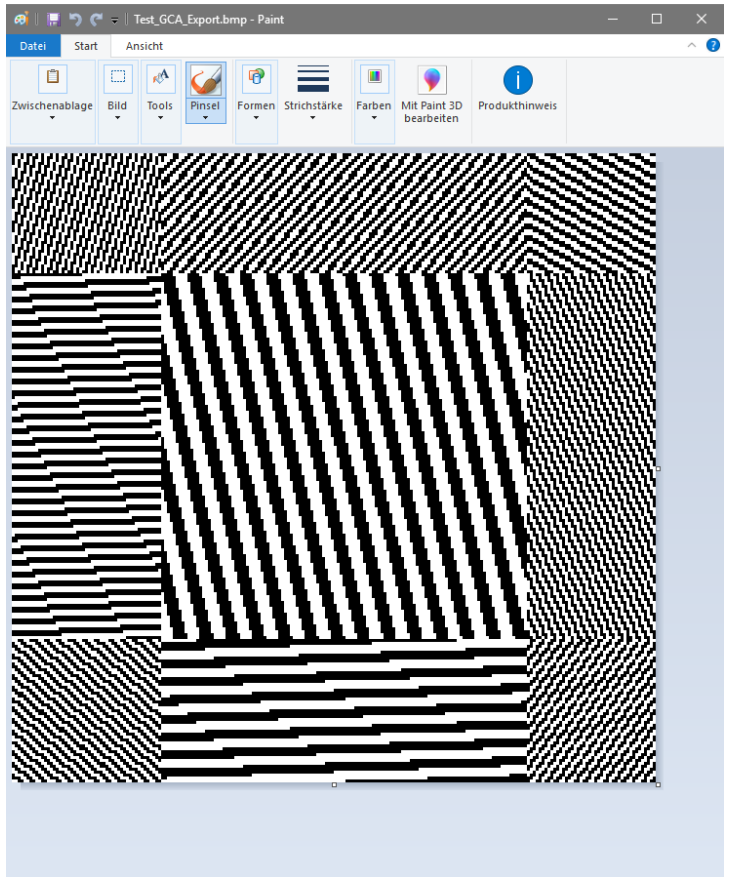
- as an example, the module for generating a phase transmission is applied to the extracted part of the whole GCA design (for simplicity)
- it is essential to note that the grating is resolved with the resolution specified in the dialog of the module (example: 1 µm and 200 nm)
- **consequently, the user must take attention whether the phase is accurately sampled!**
- **the phase must not be undersampled otherwise the cell is not working as expected!**
- **conclusion: there is a limit in diffracting a certain direction (FOV) per cell according to the limit of the feature size!**

Interpretation of the Data

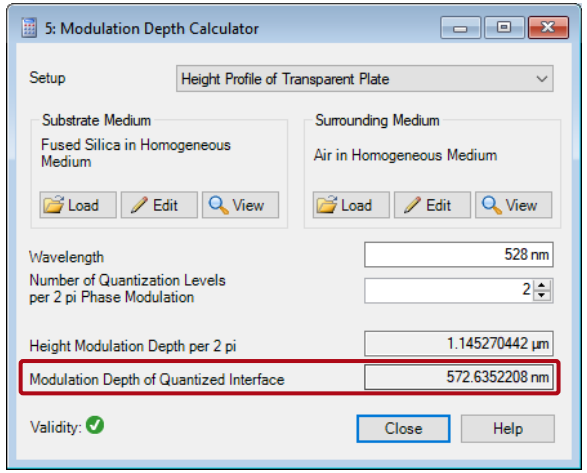


Example of phase transmission function

Bitmap of the exported phase transmission data opened in MS Paint



- the bitmap data of the exported phase function is usable for fabrication if the sampling is sufficient for a correct operation of the GCA!
- the bitmap data contains position and layer information
- the height per layer can be easily calculated by the Modulation Depth Calculator of VirtualLab Fusion (see below)



Document Information

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further reading	