

UseCase.0042 (1.0)

Convolution

Keywords: array-array-operation, image filter,
Gaussian smoothing

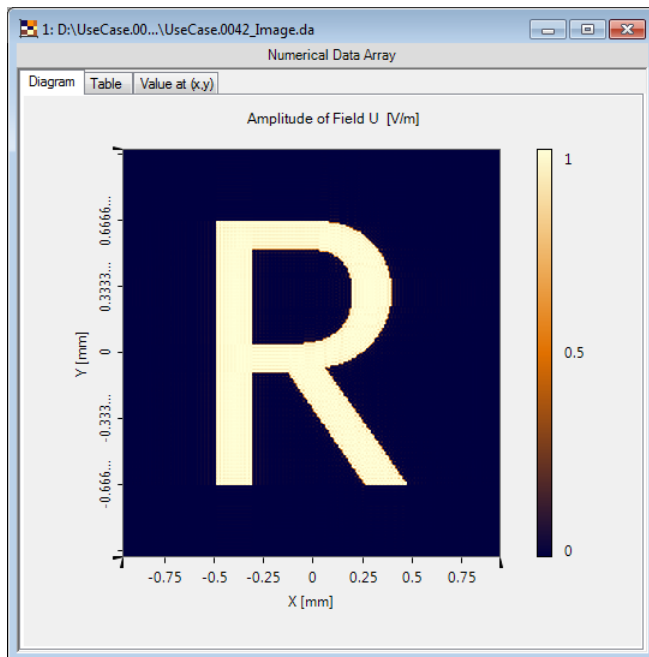
Description

- This use case demonstrates the convolution of two 2-dimensional Numerical Data Arrays.
- In the example, the convolution algorithm will be used for a special kind of image filter, viz. a Gaussian smoothing operation.
- For that purpose, a kernel will be used which is equal to a 2D-Gaussian with a waist radius of 10 sampling points and a maximum of 0.30303.

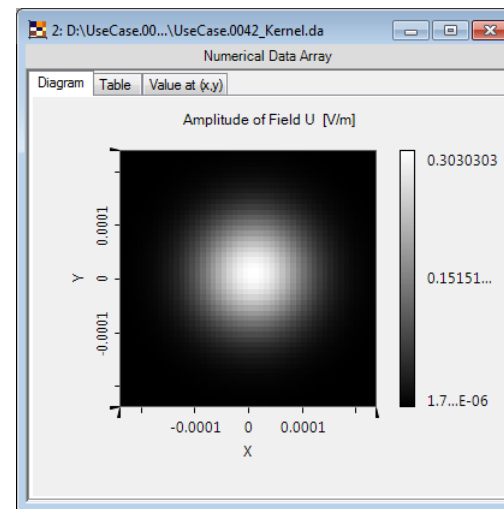
Example

The image to be smoothed as well as the kernel image can be loaded from the sample directory of this use case:

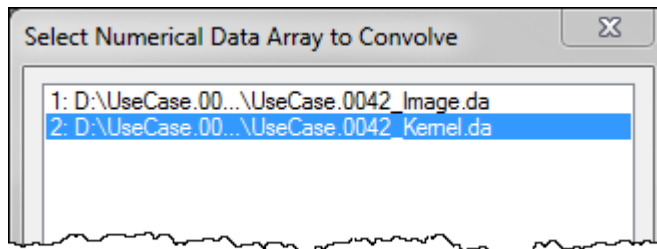
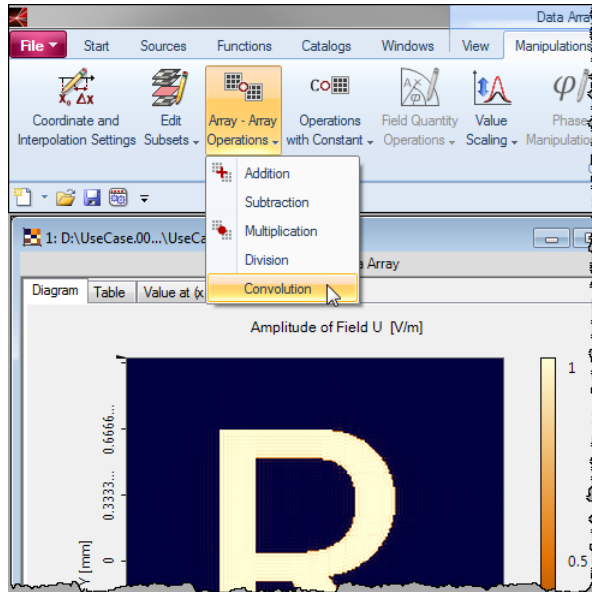
Image:



Kernel:

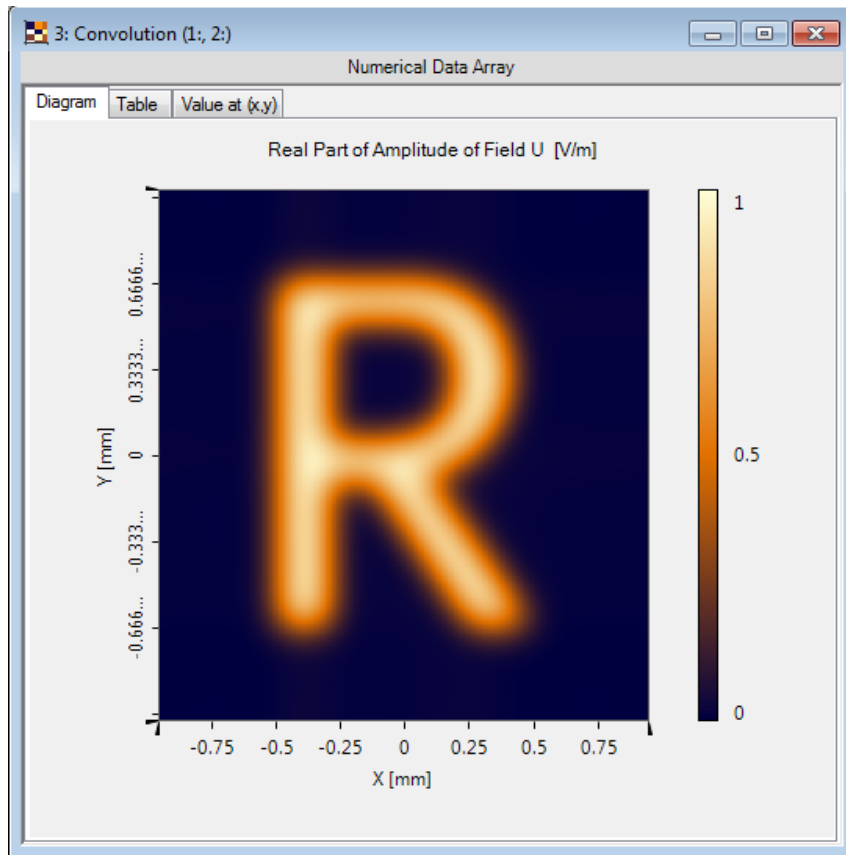


Convolution Operation



- While the image Data Array is active, the convolution is called via Manipulations > Array-Array-Operations > Convolution.
- Then, the kernel Data Array has to be selected.

Result



The result is a smoothed version of the original image.