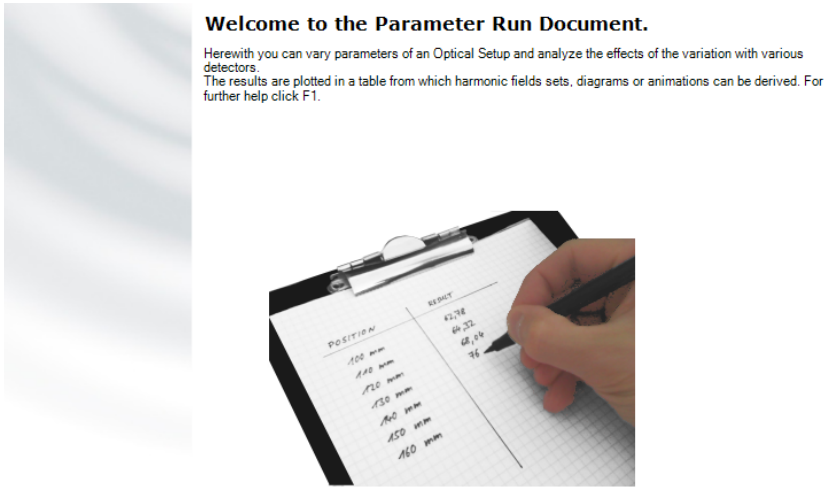
Export of Results of a Parameter Run

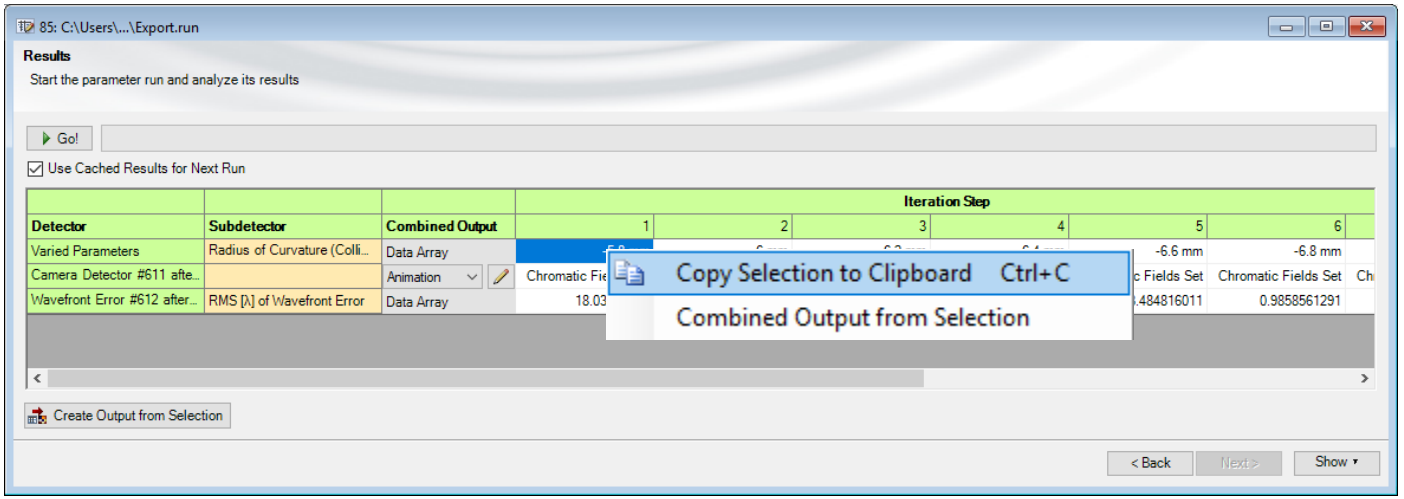
Abstract



The variation of parameters of an optical system is required for the detailed analysis of its functionality and capabilities. For this purpose, the parameter run of VirtualLab Fusion can be applied, which provides versatile options of variation strategies. After finishing the variation, the results are provided in the parameter run document. In this use case the export of the yielded results of the parameter run is explained.

Overview

- Results of a parameter run are provided in a table.
- The results of this variation can be of different type, e.g.:
  - 2D field or intensity distribution
  - numerical values of physical quantities
- In case of numerical results, the values can be marked (either single or row/column wise) and copied by right clicking or with the help of the short cut Ctrl + C.



Export of 2D Data

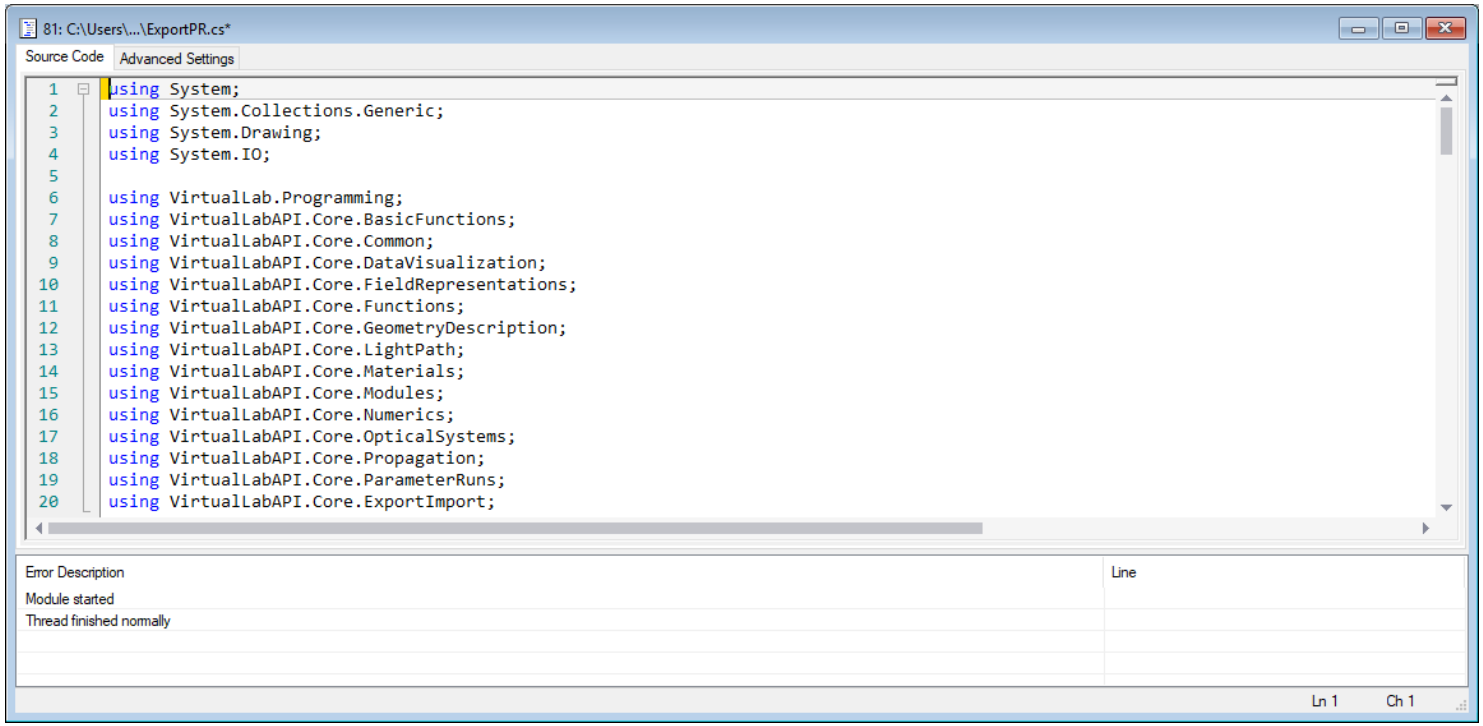
- In case of 2-dimensional field data the results can be saved only individually, by default.

- Due to the flexible programming capabilities of VirtualLab Fusion, a small module can be used in order to export the data from the parameter run into a desired file format, e.g. text or bitmap file.

- By applying the programmed module also combined outputs can be realized, e.g. putting numerical results into the header of the 2D field data (pls. see example).

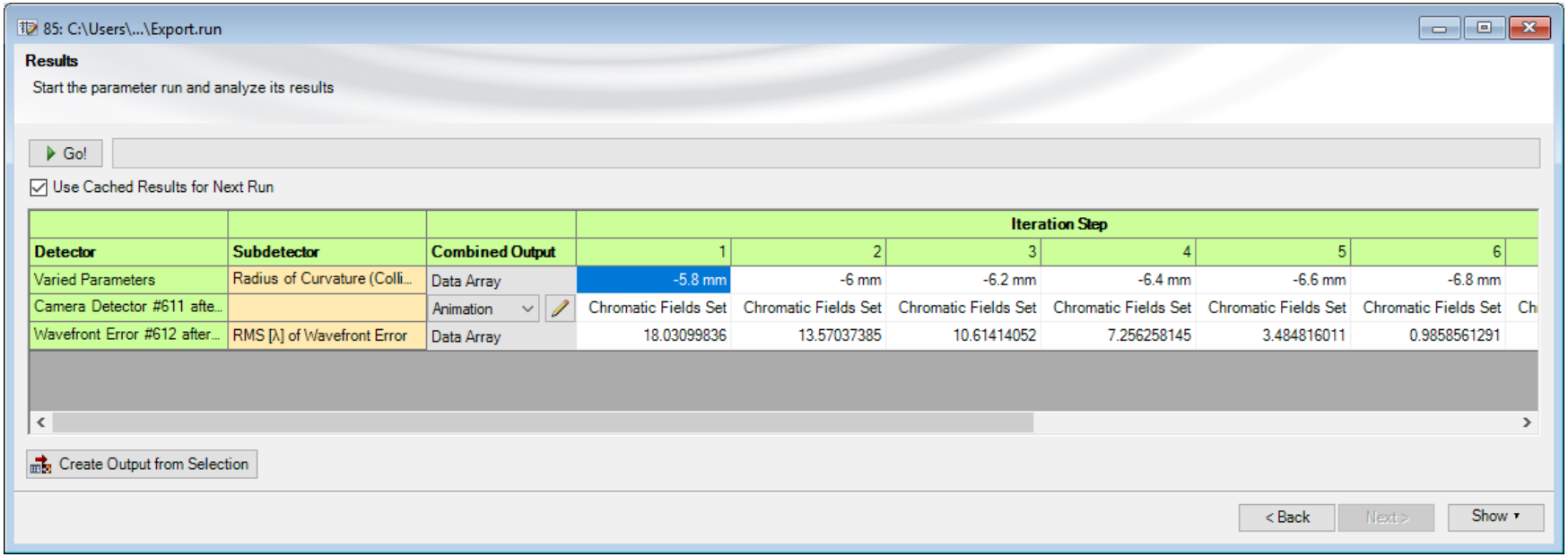
Export Module

- Inside the module, some settings have to adapted in order to customize code with regards to the particular parameter run.
- On the next slides, this process is explained based on an example.



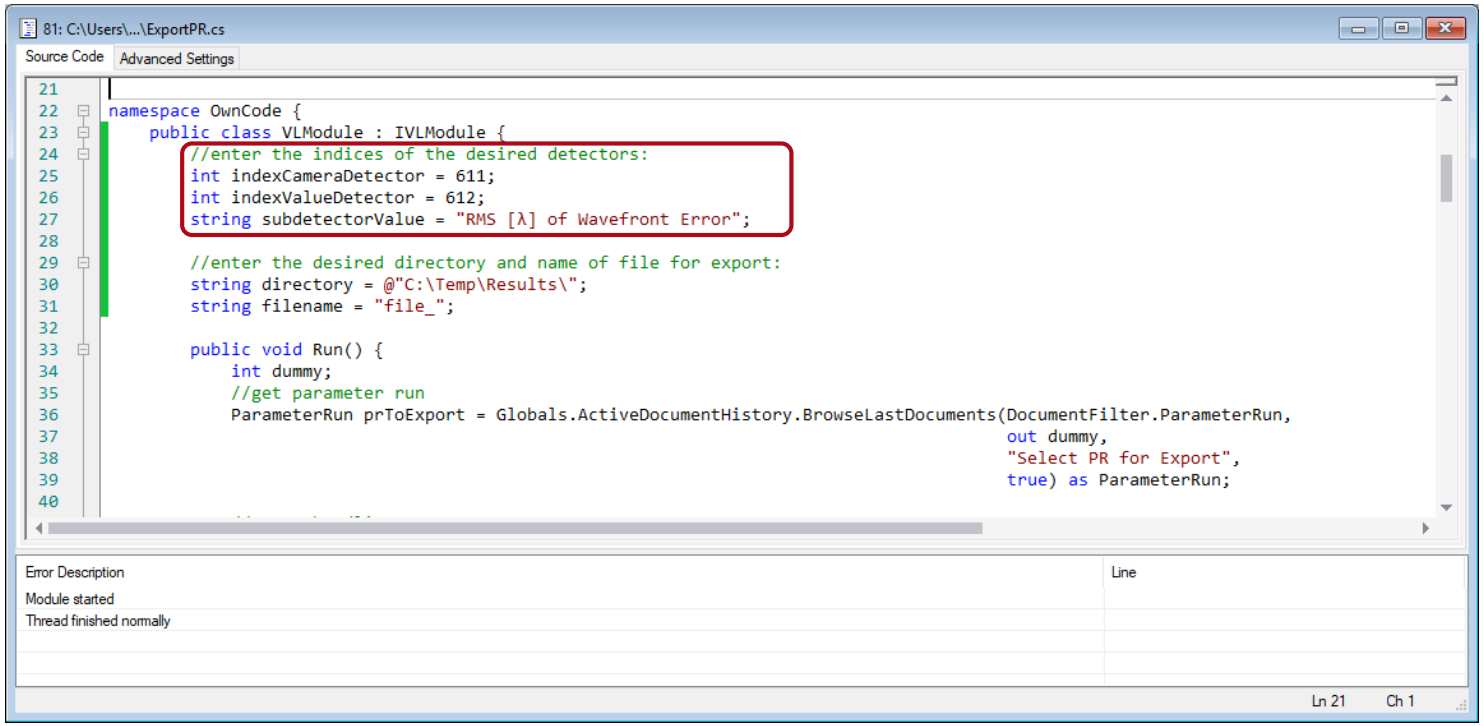
Example Parameter Run

- In the sample system, the curvature of one of the lens surfaces of a collimation objective was varied.
- The resulting intensity distribution and error of the wavefront were calculated and are intended to be output.
- For this output, e.g. the field data is output to bitmap and text and the result of the wavefront error is added to the header of the text file.



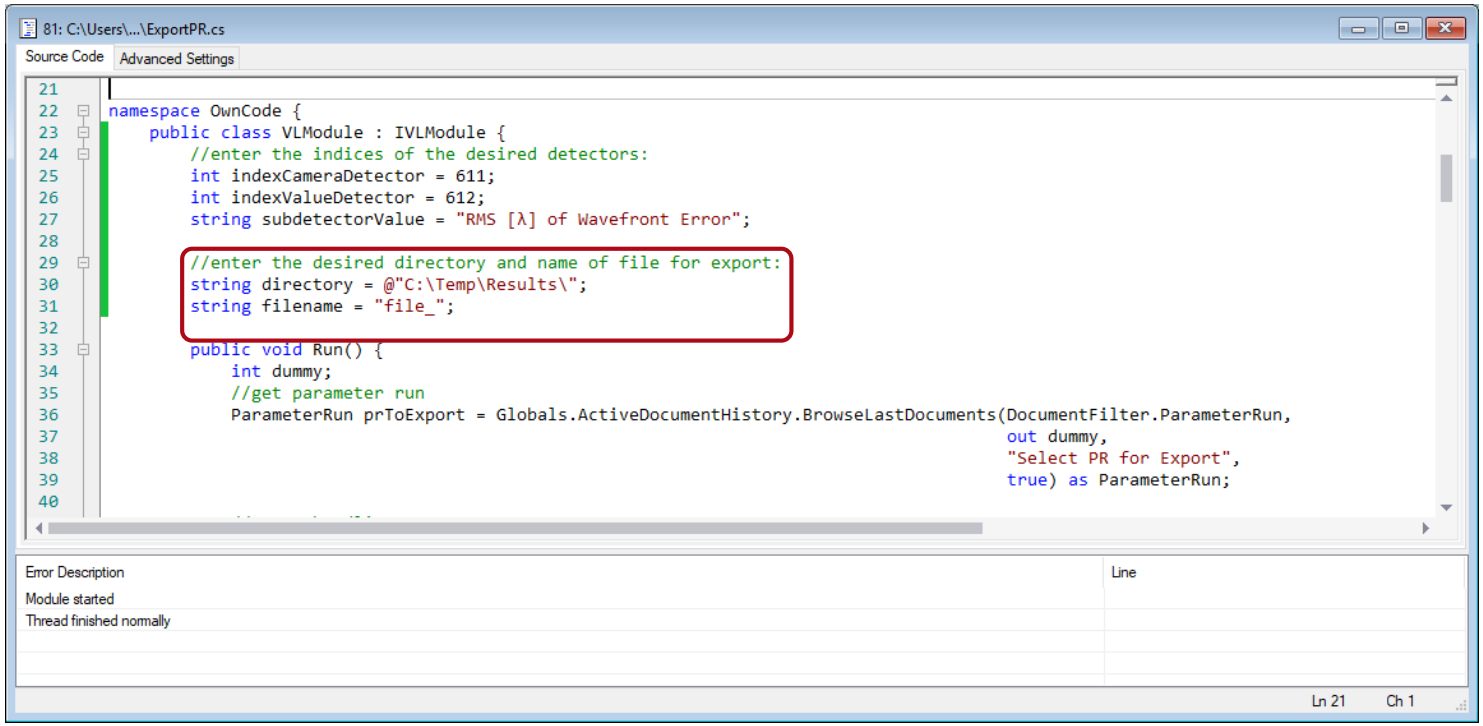
Adaption of the Module

- First, the indices of the desired detectors have to be entered (line 25 and 26).
- In case of a detector, which provides one or more numerical values, the name of the desired value (“sub detector”) has to be specified (line 27).



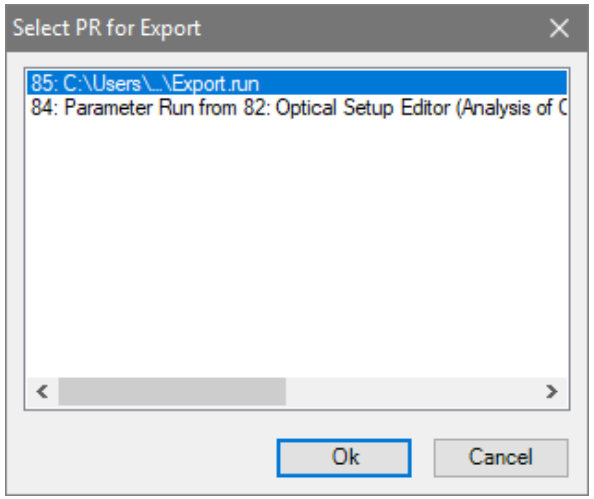
Adaption of the Module

- Further, a directory and a basic file name have to be entered (line 30).
- For the final filename, the number of the particular step of the parameter run is added automatically.

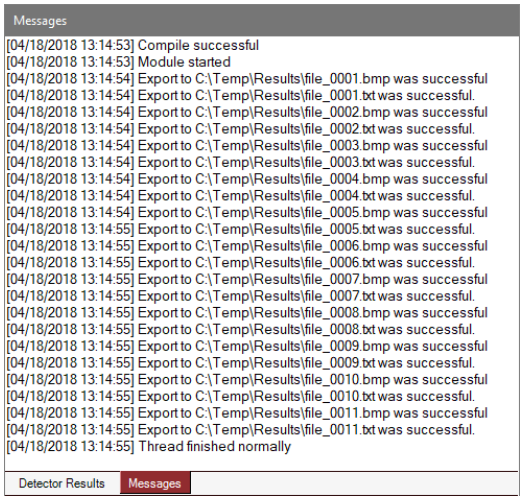


Run the Module

- After adaption of the module, it can be executed.
- In the appearing dialog, please choose the desired parameter run.

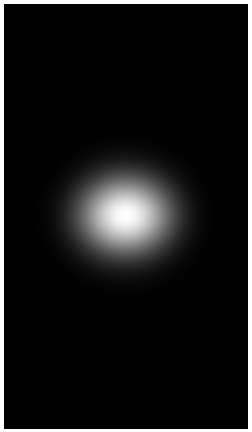


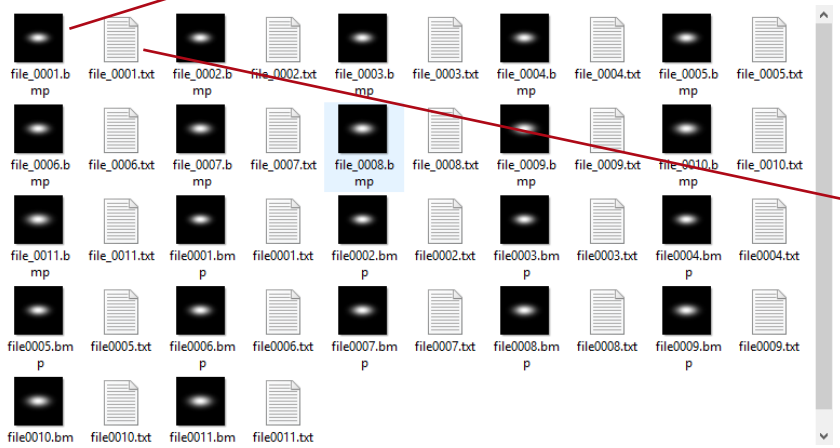
- Now, the desired results are exported to the files.

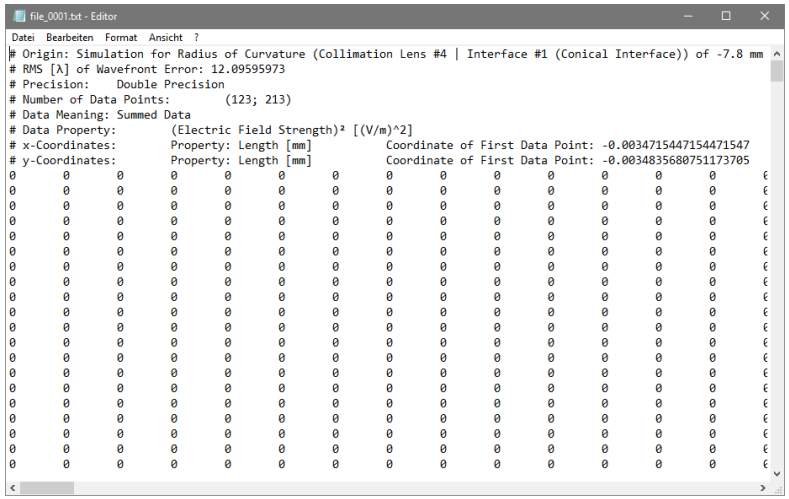


Exported Results

- The files are now located inside the specified folder.
- The data can now be further used as desired.







Customization of the Module

- All parts of the module are fully customizable.
- This means, for instance the number and format of the outputs can be changed regarding the specific application.
- In addition, also manipulations and calculations can be done before the data is output.

Document Information

title	Export of Results of a Parameter Run
version	1.0
VL version used for simulations	7.3.0.50
category	Feature Use Case