

Autocalc-sheet.xls: an Excel spreadsheet application for patient dose calculations

This application is provided for PCXMC 2.0 users without any additional cost. In order to be able to use this application you must have PCXMC 2.0 installed in your PC.

This application allows you to:

- define the examination parameters directly in Excel,
- calculate the doses and obtain the results directly in Excel, and
- add any further processing of the data in Excel.

Instructions to install the Excel application:

1. Find out the path to the file PCXMC20.exe in your PC (the installation program did suggest C:\Program Files\PCXMC).
2. Download the Autocalc-sheet.xls file from the page where you obtained this document (http://www.stuk.fi/sateilyn_kaytto/ohjelmat/PCXMC/en_GB/excel_application/) to your PC. Save this Excel workbook in the same folder where you installed PCXMC20.exe (step 1 above).
3. You may want to make a copy of the Autocalc-sheet.xls, so that you can keep the original file as a backup for further applications.

Instructions to use the Excel application:

1. The application uses macros to do the data processing. Therefore, when you open the Excel-file you must enable the macros when prompted to.
2. Create a subfolder in your folder PCXMC\MCRUNS (e.g. PCXMC\MCRUNS\mydata). This subfolder will be used for storing the definition files (*.df2) generated from the Excel-data. When making the calculations using the Excel macros you'll need to enter the name of this subfolder (mydata in the above example).
3. Fill data for each examination that you wish to obtain the doses for. Each projection is defined in one single row by filling data in the cells in columns A to T (coloured yellow in the application). There must be a valid datum in each column on this row. You can fill data in as many rows as you wish, but note that the combination of subfolder name / hospital / patient number / examination / projection must be unique: no two rows may have the same combination of data in these fields. The sum of the lengths of these identifiers must not exceed 26 characters.
4. Press <ctrl>a to start the first script and enter the start row, end row and the name of the subfolder (mydata in the example above) when prompted. The macro will then generate *.df2-files in the subfolder that you created in step 2 above. After performing this step we suggest that you check that all the generated *.df2 files are correct. You can do this by starting PCXMC and looking at the examination data by opening the generated *.df2 files one after another.
5. Return to Excel and press <ctrl>b to start the PCXMC calculation of doses. Again, you will be asked for the start row, end row and subfolder name. The calculation may take a long time, depending on the number of projections that you'll calculate. The definition files, simulation results (energy files) and dose files will be stored in the folder PCXMC\MCRUNS.
6. When the calculation has been finished you can copy the calculated doses to Excel (in columns AA to CN, coloured orange in the application) by pressing <ctrl>d. Again, you will be asked for the start row, end row and subfolder name. You are done!

Hints:

Note that <ctrl>a, <ctrl>b and <ctrl>d do not function in this application as they commonly do in Excel workbooks. If you wish to change these shortcuts, you can do it by choosing Tools→ Macro→ Macros...→ Options...

If you wish to edit the input data in some rows later, after having done the dose calculations, you must delete the corresponding definition files in the subfolder that you used (PCXMC\MCRUNS\mydata in the above example) and the corresponding definition files, energy files and dose files in the folder PCXMC\MCRUNS, and run the three macros again for these rows. Otherwise, when PCXMC is started the message “The data file name specified in Autocalc.df2 has already been used” will be displayed. You can then recover normal operation by deleting these already calculated definition, energy and dose files or the file Autocalc.df2 in PCXMC\MCRUNS.

You may modify the macros in the Excel sheet to better comply with your needs. You may also include additional data processing on the cells on the sheet if you wish to do so. If you modify the application, you must note this clearly in the Excel-workbook.

Note that presently the file-name length for the output filename specified in autocalc.df2 is limited to 30 characters maximum. Therefore, the sum of the lengths of the strings used in forming it (the name of the sub-directory, hospital identifier, patient identifier, examination identifier, projection) must not exceed 26 characters (four dashes are added in the generation of the name). If necessary, you may edit the output file name generation rule in the macros to achieve fulfilling this condition.

*** This application is used by the sole responsibility of the user. Neither STUK nor the authors of the scripts shall be liable for any errors or damages arising out of the use of them. ***