

Frequently asked questions to Z88Aurora

- ***Program abort after installation / no paths in the menu "options" / the present paths are not taken on / STL or STEP Import via Geocon or TETGEN / NETGEN don't work:***

Please install Z88Aurora as admin or as user. Do not switch between these user accounts! Otherwise problems occur due to the user access control.

- ***Input-window are outside the monitor:***

The defaulted standard-size of Z88Aurora with the start is 800x600 pixels. You have two possibilities to alter these, either you edit in the file z88enviro.dyn (table Z88AuroraV2/win/bin or Z88AuroraV2/bin/ubuntu64 bzw. Z88AuroraV2/bin/suse64 bzw. Z88AuroraV2/bin/mac) the parameter "RESOLUTION 800 x 600" (attention: do not forget the blanks before and after "x"!) or you use one that in the option menu (see menu "Tools") under the slide "View" of defaulted screen-dissolutions.

- ***No correct import / no meshing of given geometry dates:***

Sometimes, mistakes occur when exporting a file from a CAD program. The library "Open Cascade" deposited in Z88Aurora for 3D data exchange of surfaces and solids cannot handle corrupted dates or fragments. This can lead to representation mistakes or interruptions within the meshing algorithms.

- ***Interruptions of the meshing algorithm:***

Z88Aurora is a development of Z88V13 with a widened user interface for the pre- and post-processing. The meshing takes place with help of two external freeware programs, for whose courses no guarantee can be taken over.

- ***Screen flickers, representation is faulty, visualization problems with big structures:***

Representation problems in the graphics usually arise from the graphics card, especially from suboptimal support of OpenGL functionalities. Separately installed drivers of the respective graphics card manufacturer can create remedy. With Windows 7 problems occur with the representation attitudes (aero windows) of the operating system specifically. In this case the solution is the deactivation of the functionality during the use of Z88Aurora.

- ***Aurora cannot open files / help documents / movies:***

In the option menu, the corresponding paths can be chosen under the slide "Paths". See installation handbook.

- ***Selected paths are not captured:***

This failure only was observed at Windows Vista and it can be reasoned by the user account control. If you have this problem you will solve it by working as admin.

- ***Error message "libgtk ... was not found":***

The required GTK package was not installed. Or possibly, older versions of GTK, that don't support all functionalities of Z88Aurora, exist through other program packages (e. g. Gimp). Therefore install the proposed GTK package from the Z88 homepage, nearer is found in the installation-handbook.

- ***Displaying output files (selectable under post processor → output data) by the internet explorer does not work:***

Sometimes, the internet explorer has problems with displaying large files. In this case, do use another browser. You can set another browser at the menu "Options" (see "Tools") under "Paths". Do choose the corresponding executable file of the new browser at "Browser". We made good experiences with the Firefox of Mozilla.

Additions from Prof. Rieg:

- **How to handle the „Cannot open PANGO-Font!“ message:**

This message mostly occurs on Mac OS X and LINUX systems using former Z88Aurora versions.

Simple solution: install Z88Aurora V2

Background: Windows, Mac OS X and LINUX internally use different font management-systems, each which OpenGL features no support for; this is up to GTK+ itself using directly WinAPI or X11-system. Some internal X11-calls are no more up to date causing trouble with current LINUX- resp. Mac OS X operating systems.

Therefore the newer versions, beginning with Z88Aurora V1b, finally solve the problem by having implemented an own font system, which offers a bitmap font (default) and a vector font: the vector font is especially recommended for the visually impaired. It is activated via

VFONT_USE 1

in the control file Z88.FCD (**VFONT_SCALE** and **VFONT_THICK** scales the font according to the users' needs). Z88.FCD is stored in the respective **bin**-subfolder.

- **Z88Aurora starts with a red screen resp. computes wrong results!**

This would appear, if you started Z88Aurora from the (operation system specific) **bin**-folder by the command **./z88aurora**

Simple solution: do use the start script by the command **./aurorastartv2**

Background: Z88Aurora is programmed in C and, hence, uses the dot as decimal separator, just like any other programming language. Other operating systems (e.g. the German one) use a comma. Therefore, the control file Z88.FCD (in the respective **bin**-subfolder) will be misinterpreted, leading to wrong colors and wrong results. This problem mostly occurs on Mac OS X and LINUX system using former Z88Aurora versions.

Remedy (this is the content of the start script **./aurorastartv2**): Prompt in the **.bashrc** resp. **.bashprofile**:

export LANG=C

export PATH=\$PATH: . (thus colon dot)

(Mac OS X only)

export DYLD_LIBRARY_PATH=\$HOME/z88aurorav2/bin/mac

Alternatively, Z88Aurora can be started via a Terminal using the former commands (UNIX standard) in advance.

- **Z88Aurora is freeware – why not Open Source then?**

Backgrounds:

1. legal reasons, not further discussed in this context.

2. Z88Aurora is one of few free FEA-programs, that work mostly identical (in native mode!) under Windows, LINUX and Mac OS X; sounds easy but is very laborious in praxis, with many specialities to consider. Although using ANSI-C as programming language as well as

GTK+ for the GUI and OpenGL for 3D-graphics, very profound knowledge in WinAPI and X11-system is categorically required. For instance, there is no ready-to-run interface from GTK+ and OpenGL to Windows 64-bit; therefore, this is an in-house development.

Vice versa there is the well-suited claim for real OpenSource-software to be easily compiled with configure and make. Due to the program's complexity, this is not possible without further ado; therefore this is not an option for Z88Aurora. Especially for Finite-Elements-OpenSource-programs in the internet there are some very bad examples, that even advanced programmers won't get completely or at all compiled.

Remedy: For those who are interested in the program code there is the OpenSource-version Z88V14 OS for each operating system: Windows (with WinApi) and LINUX/Mac OS X (with GTK+): The solvers and the basic GUI are quite similar to those of Z88Aurora and can be easily compiled for Windows, Linux and Mac OS X.

- ***Why does the Mac-version of Z88Aurora not follow the typical "Mac-style"?***

The typical and very appealing Mac-style presumes for programming paradigm OpenGL, the so called Cocoa-API and as programming language Objective-C. OpenGL is not a problem in this context, but Cocoa-API is based on the former Next-Step and differs significantly from WinAPI or GTK+. Objective-C is C with object orientation, to my opinion more suitable than C++, but nevertheless just a workaround.

With Apple using an X11-system for several Mac OS X versions, this is being used for Z88Aurora in order to avoid a complete rework. Anyhow Z88Aurora comprises many Mac-specifics.

Another reason is that with a similar usage of Windows, Linux and Max OS X multi-system end-users can easily get along with both, their e.g. private-Mac and their company PC.

- ***Why is C and OpenGL used for programming and not the "more modern" C#, .NET and DirectX?***

Considering pure calculation power C and FORTRAN still are still top of the list. According to in-house comparisons languages like C# resp. Java do need at least twice the time for similar program code than C – several Z88Aurora-modules were intensively tested on that.

DirectX' inner structure resembles OpenGL; therefore no severe problems would be expected but also no advantages compared to OpenGL. Currently DirectX seems to dominate the computer games market, whereas OpenGL is No. 1 concerning technical graphics. WebGL (a downgraded OpenGL) covers the huge smart phone market.

- **Why do you use GTK+?**

For a complex software like Z88Aurora only three programming paradigms may match: GTK+, .NET or Qt:

- GTK+ is an OpenSource-program, written in C and available for Windows and X11-systems. Due to the C-interface it is quite easily to access OpenGL using an intermediate library like e.g. gtkglext (which actually is not used for Z88Aurora for several reasons).
- .NET is property of Microsoft, the typical programming language is C# and is especially for Windows programs, although the Mono-project does a good job. OpenGL-use in C# is not too easy, nor is DirectX.
- Qt is a high performance application, but its legal status currently is not yet resolved definitively from our point of view.

The forth one, the so called GLUT-Library, is not an option, being suitable for learning OpenGL only, but not for high grade OpenGL/GUI-programs (although being used as such in several programs).