

Frequently asked questions to Z88 Aurora

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

Please install z88 Aurora 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 Z88 Aurora with the start is 800x600 pixels. You have two possibilities to alter these, either you edit in the file z88.fcd (table z88aurorav1/bin) the parameters "IW_DRAWAR" and "IH_DRAWAR" or you use one that in the option-menu 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 Z88 Aurora to the 3D data exchange for 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:**

Z88 Aurora 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 Open GL 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 Z88 Aurora.

- **Aurora cannot open files / help-document / video:**

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

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

The required GTK package was not installed. Or possibly, older GTK-Versions, that don't support all functionalities of Z88 Aurora, 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.

- ***With several simultaneous boundary conditions on a node, only one labeling is represented:***

If several loads on a node can be found, the individual loads are represented however one on the other what leads that only one colour is visible. Use the function "Constraints" within the menu "View". Here, every individual boundary condition can be represented separately.

- ***Error message: File MSVCR80.dll could not be found :***

From the <installation directory>\bin of GTK the files
 Libglib.dll
 Libobject.dll
 Zlib1.dll
 must be copied in the <installation directory >\bin\win64 of Z88 Aurora.

The files must exist in BOTH tables after it. Postponing the files can lead to errors.

- ***Error message: Cannot open Pango Font! STOP!
 (Z88Aurora V1 and Z88AuroraV1a only – see page 3 for further information)***

This error is derived from a missing standard font. Switch to the z88aurorav1/bin/[operating system] directory. Open the file z88.fcd and edit the following passage:

WINDOW START

```

    IW_DRAWAR      640
    IH_DRAWAR      512
    PANGO_FONT     Arial
    PANGO_SIZE     10
    DEPTH_SIZE     1
  WINDOW END
  
```

Replace **Arial** after **PANGO_FONT** by **Sans** and save the file.

Additions from Prof. Rieg:

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

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

Simple solution: install Z88Aurora V1b

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 a new version – Z88Aurora V1b – finally solves the problem 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!**

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: Prompt in the .bashrc resp. .bashprofile:

```
export LANG=C
```

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

(Mac OS X only)

```
export DYLD_LIBRARY_PATH=$HOME/z88aurorav1/addons/geocon/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 Z88 V13.0A 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).