

Embalance CAD

User manual

After executing Embalance CAD, 3D model of finite elements is generated and shown in main window of application **Figure 1**.

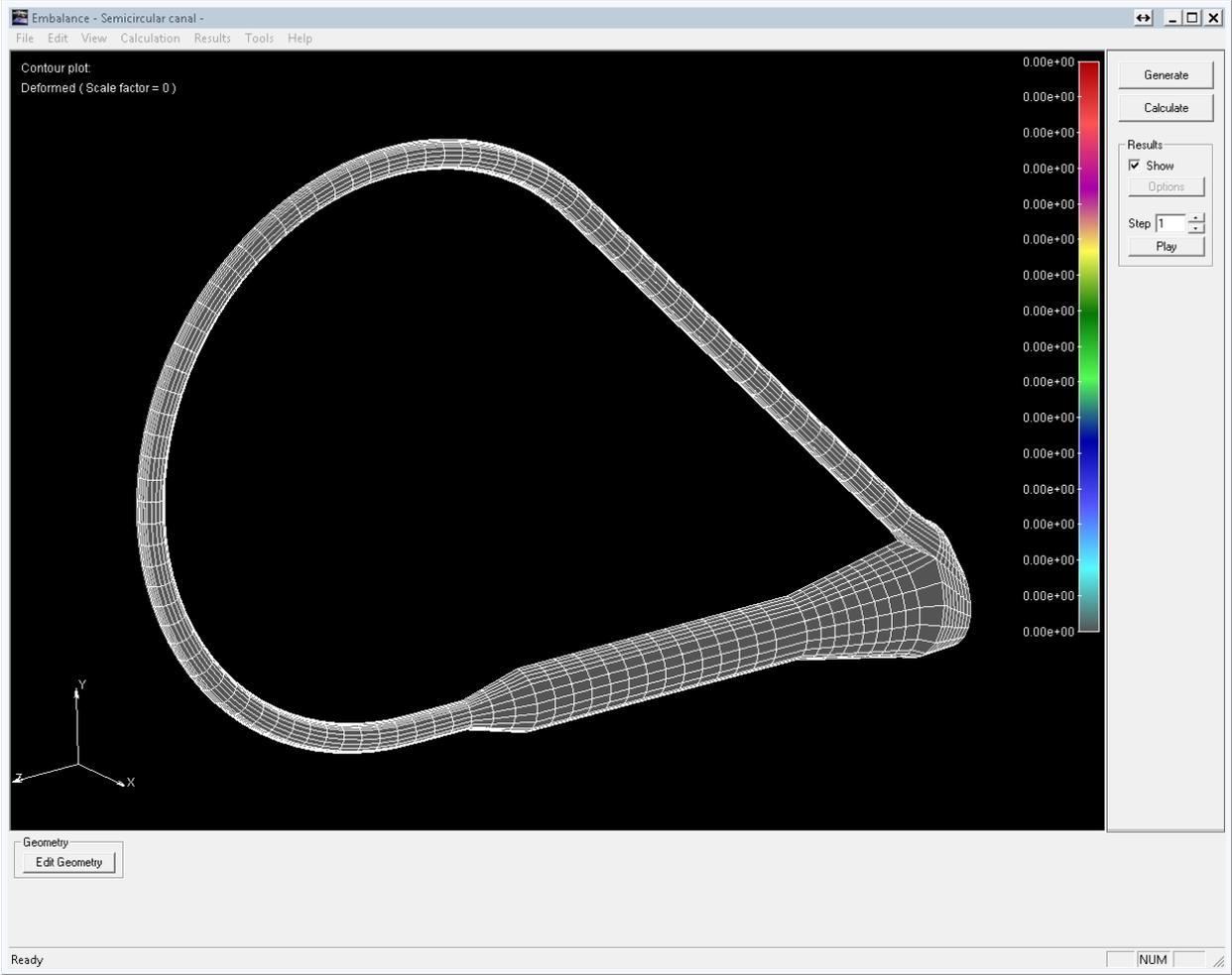


Figure 1 – Embalance CAD Main window

On the top of the window is the main menu for accessing general functionalities of the software. In the file menu user can import UNV files with results from some previous calculations or export screen shots of the actual model **Figure 2**.

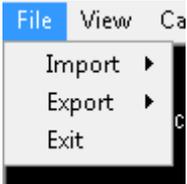


Figure 2 - File menu

In view menu user can choose viewpoint or the way how he want to operate with model. zoom, pan, rotate etc **Figure 3.**

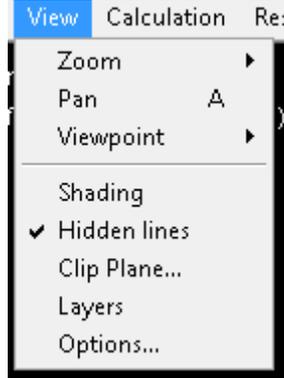


Figure 3 – View tab

Rotation also can be accessed by clicking R key on keyboard, pan by P key and zoom region mode can be enabled by Z key.

In calculation menu user can start calculation or choose number of time steps and other options **Figure 4.**

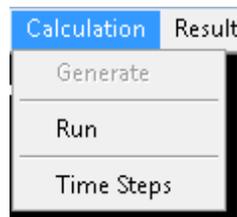


Figure 4 - Calculation menu

In the Results menu user can show result and choose different options of results which will be shown, **Figure 5.**

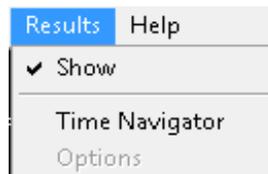


Figure 5 - Results menu

On the left side of the main window is the side bar, **Figure 6**, where are the buttons Generate for generating the model and applying modified model parameters, Calculate for starting the calculation process with solver, Results group box where user can view results of realized calculation by checking the Show check button. Options button opens menu for changing type of results that will be shown and other result properties. In Step edit box user can play animation in case of non-stationary (transient) simulations.

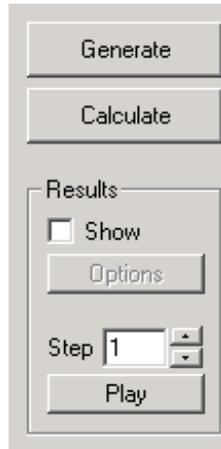


Figure 6 – Side bar

After setting up the parameters of the model user can see their effects by starting calculation on calculate button click on the side bar. Window shown on **Figure 7** indicates that PAKF started calculation.

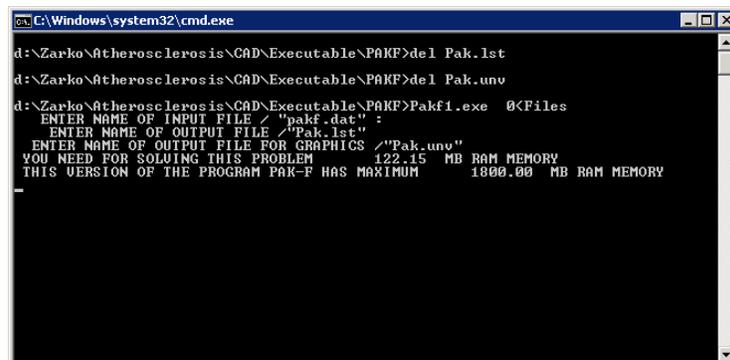


Figure 7 – PAKF started calculation

After completed calculation application reads the results and returns the overview of the simulation results **Figure 8**.

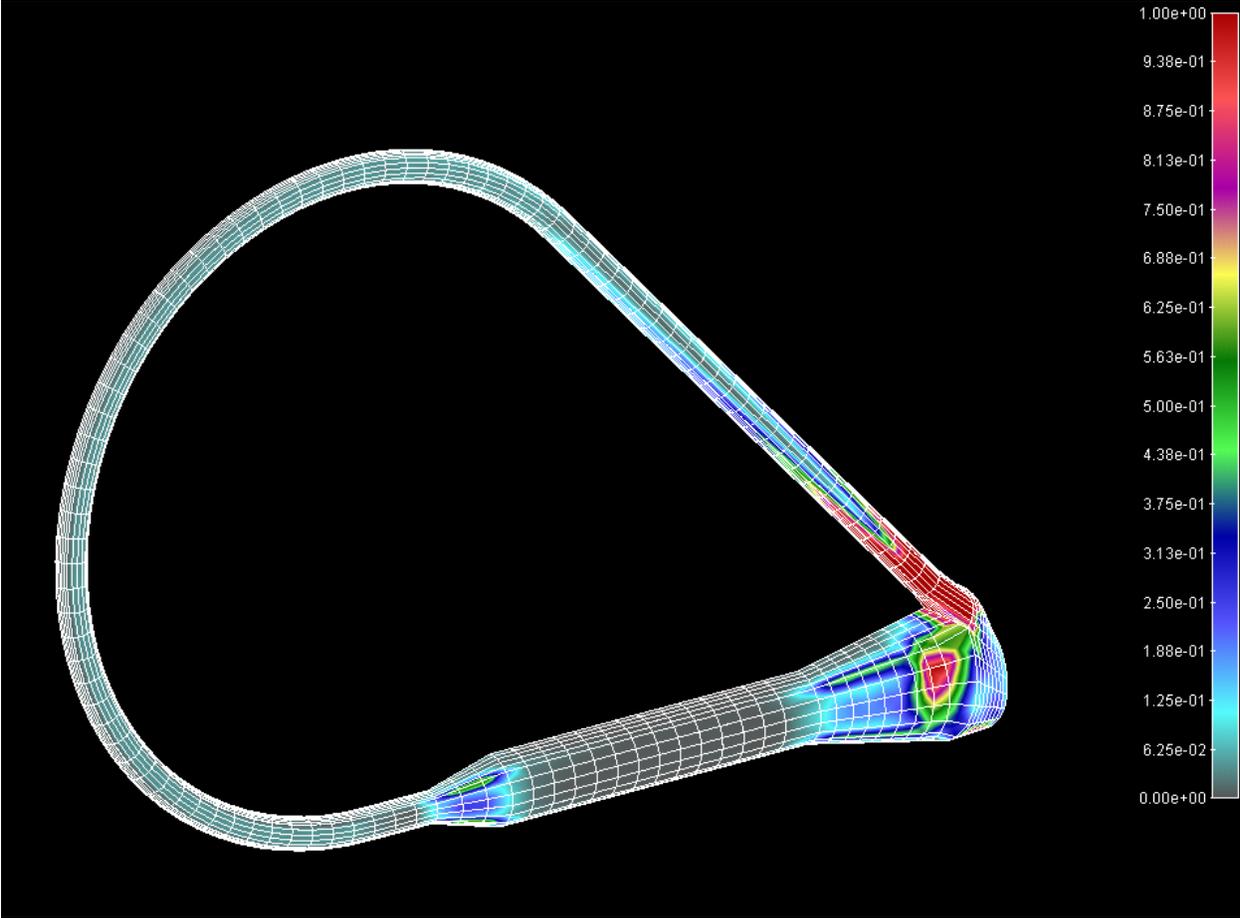


Figure 8 – Shear stress distribution

By default first results that will be shown are shear stresses. User can change result overview by clicking the Options button on side bar **Figure 9**.

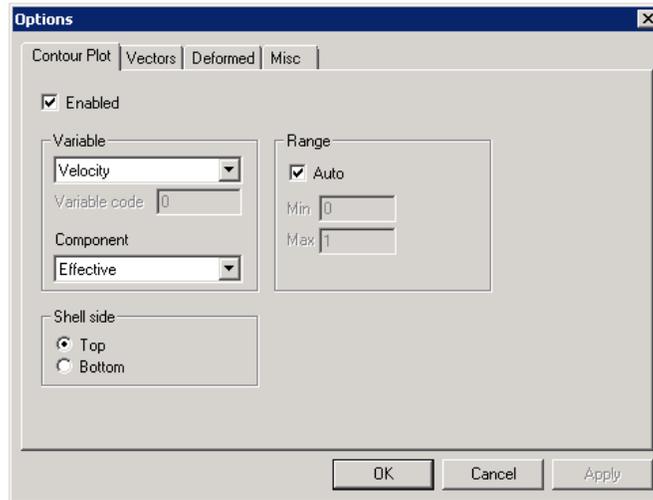


Figure 9 - Options → Contour plot

User can change variable which is shown by clicking Variable drop down box where is the list of available variables that can be visualized **Figure 10**.

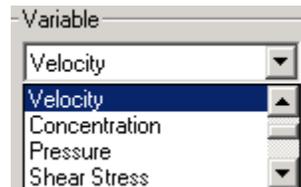


Figure 10 – Picking up the results

For the Velocity in Component drop down list Effective velocity is shown by default but user can choose components in other three directions **Figure 11**.



Figure 11 – Picking up the components

In the vectors tab **Figure 12** user can see velocity vector field by choosing the variable in the Vector drop down list and checking the Enabled check button in Vectors tab and unchecking it on the Contour Plot tab.

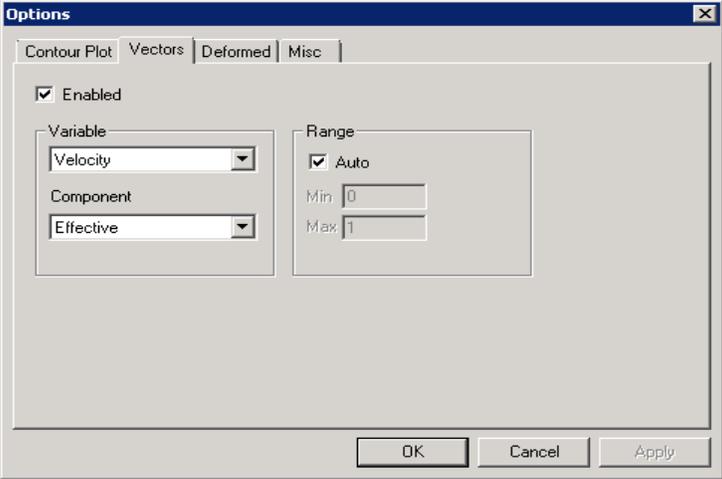
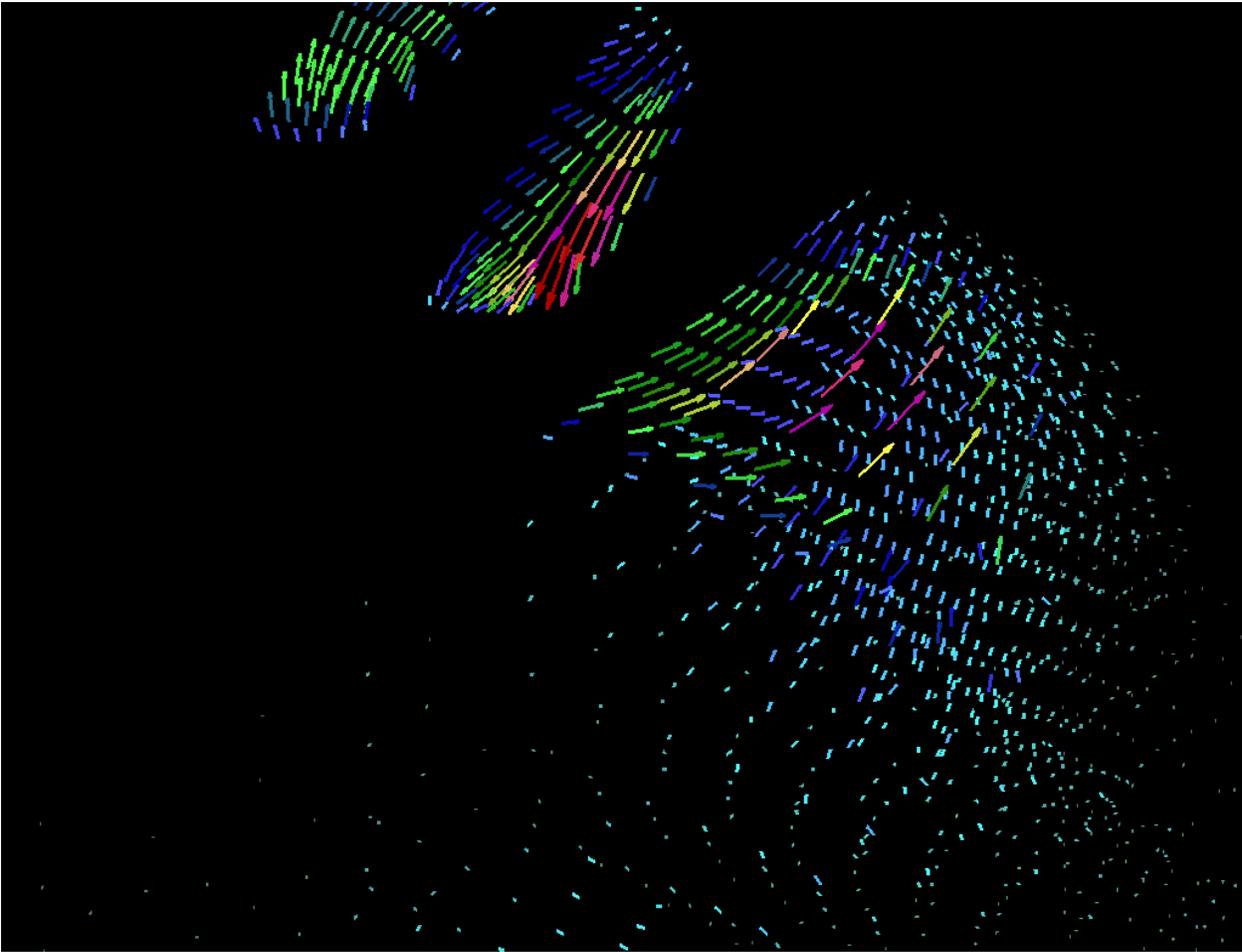


Figure 12 – Picking up the components

After clicking the OK button user will get overview of velocity vector field. On **Figure 13** are shown velocity vectors.



For better overview of the results when mesh density is high user can turn of the mesh in Misc tab by unchecking the Show mesh check button **Figure 14**.

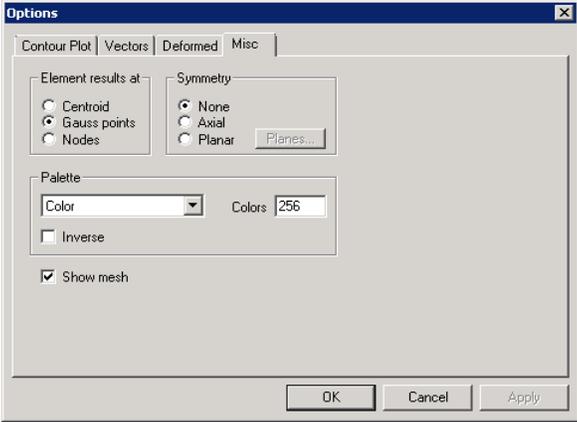


Figure 14 – Misc tab

User can change model parameters by clicking Edit geometry button in main window **Figure 15**. Dimension parameters are explained on scheme included in dialog. Mesh parameters define resolution of the mesh. Div W define number of cross sections on the model and Div UV parameter define resolution of the mesh in every cross section. Larger number means more elements. After setting up desired parameters user can validate them by clicking on button ok. In order to parameters take effect on model it is necessary to click button Generate from side menu or button Calculate. In Calculate button case Embalance CAD will first generate mesh with updated parameters and run calculation automatically after.

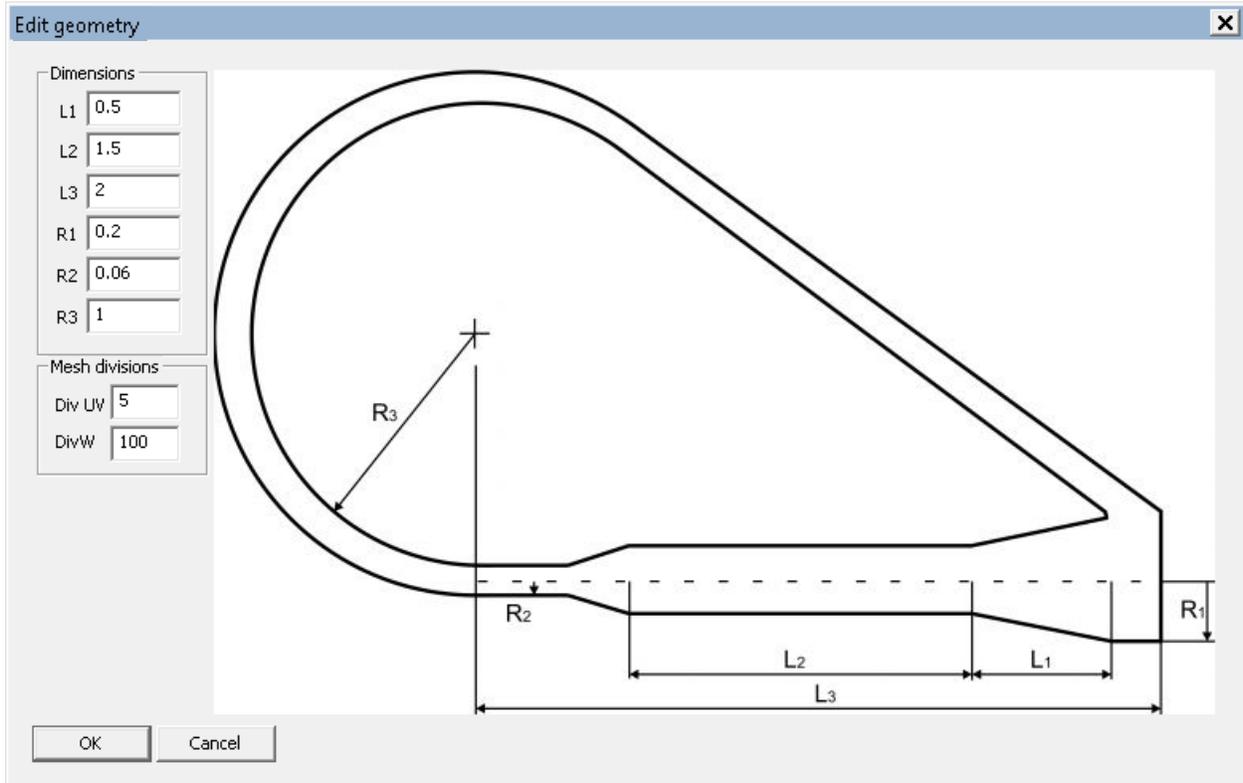


Figure 15 – Model parameters