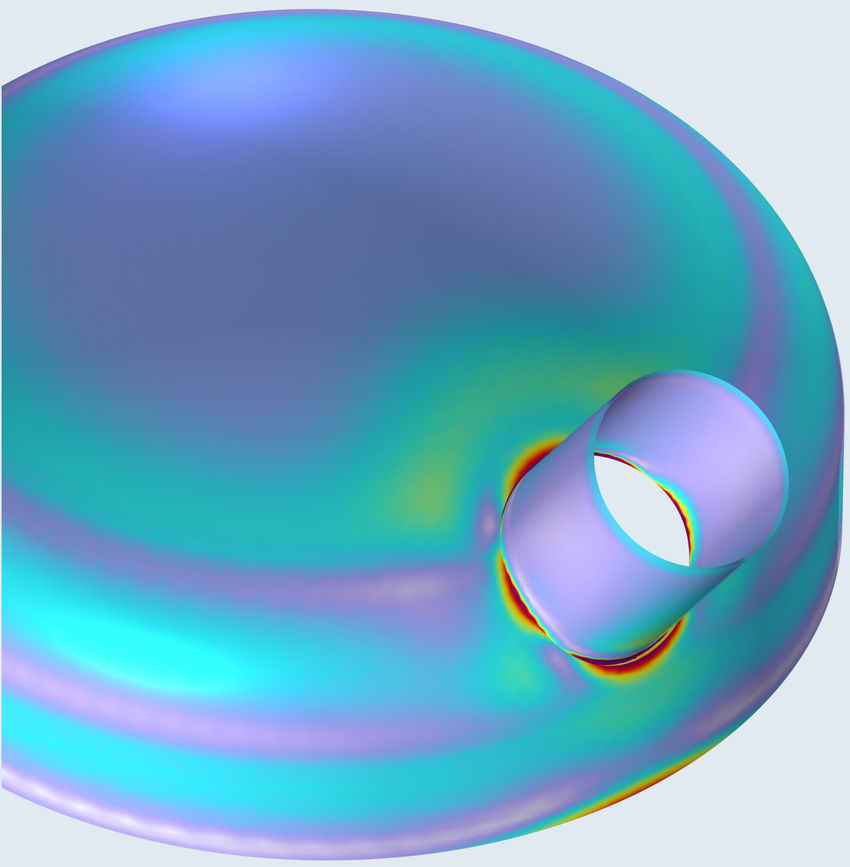

Fully Automated FE-Application

Fast and robust solution for calculating standard and special constructions of all kind of nozzles in shells and support constructions as saddles or support legs.

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Goal

Modern engineers often need to calculate special types of nozzle positions with different loads, but analytical calculations do not consider all external loads. In these cases, an FE calculation can be applied which can be very time expensive.

We want to give engineers a tool to solve their calculations intuitively and quickly with reliable results.

The main goal is to save valuable time that can be spent on further projects.

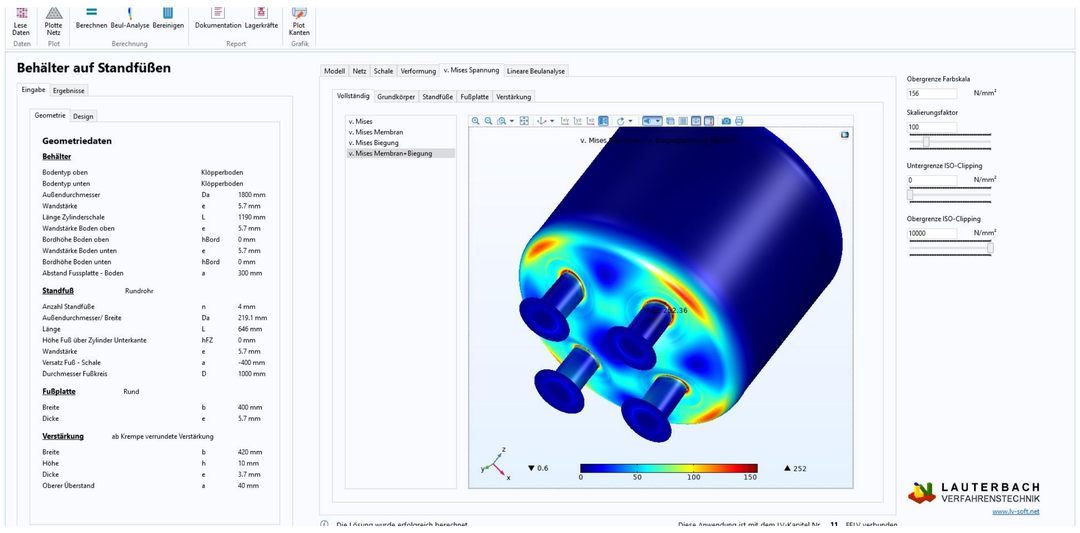

FIGURE 1 General design of the application. Graphic: Combined bending- + membrane stress

Methodology

The simulation is set up as a static structural mechanic analysis coupled with a linear buckling analysis.

Its all out of one hand. The application builds up the model, set up the simulation, meshes the model, solve the simulation and evaluates the results. All to know is the geometry, the used materials and the operating conditions.

Set – Solve – Evaluate

Check – Print – Documented

Results

Since the calculation is performed using a shell geometry, we can evaluate the stress components directly. All results are shown separately.

The stresses are categorized according to DIN EN 13445-3, AD 2000 or ASME VIII DIV 1 Code.

Additionally, optimizations can be done, such as finding the minimum wall thickness or the maximum load factor for external loads

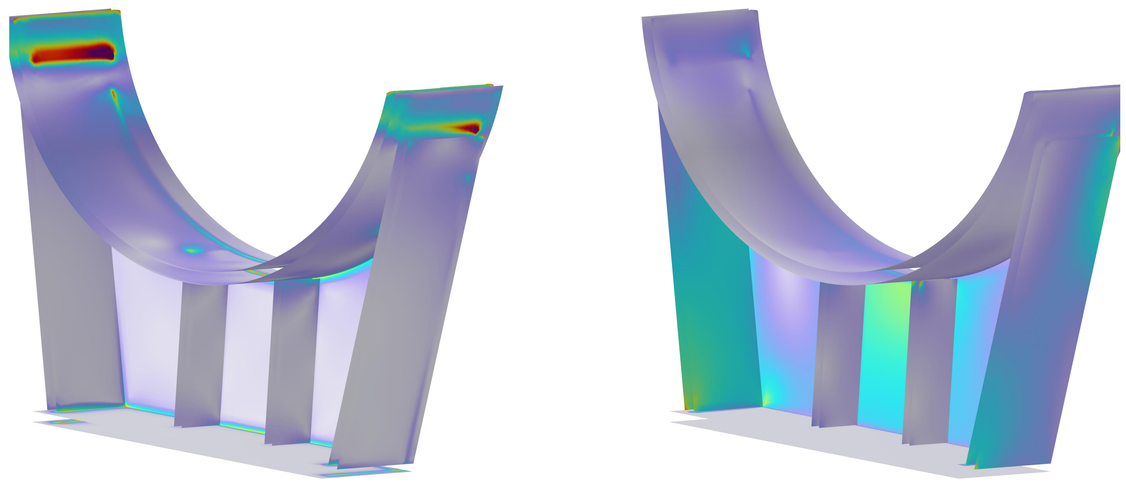

FIGURE 2 Left: Bending stress. Right: Membrane stress. (shell geometry vessel on saddle support)

REFERENCES

www.lv-soft.de

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