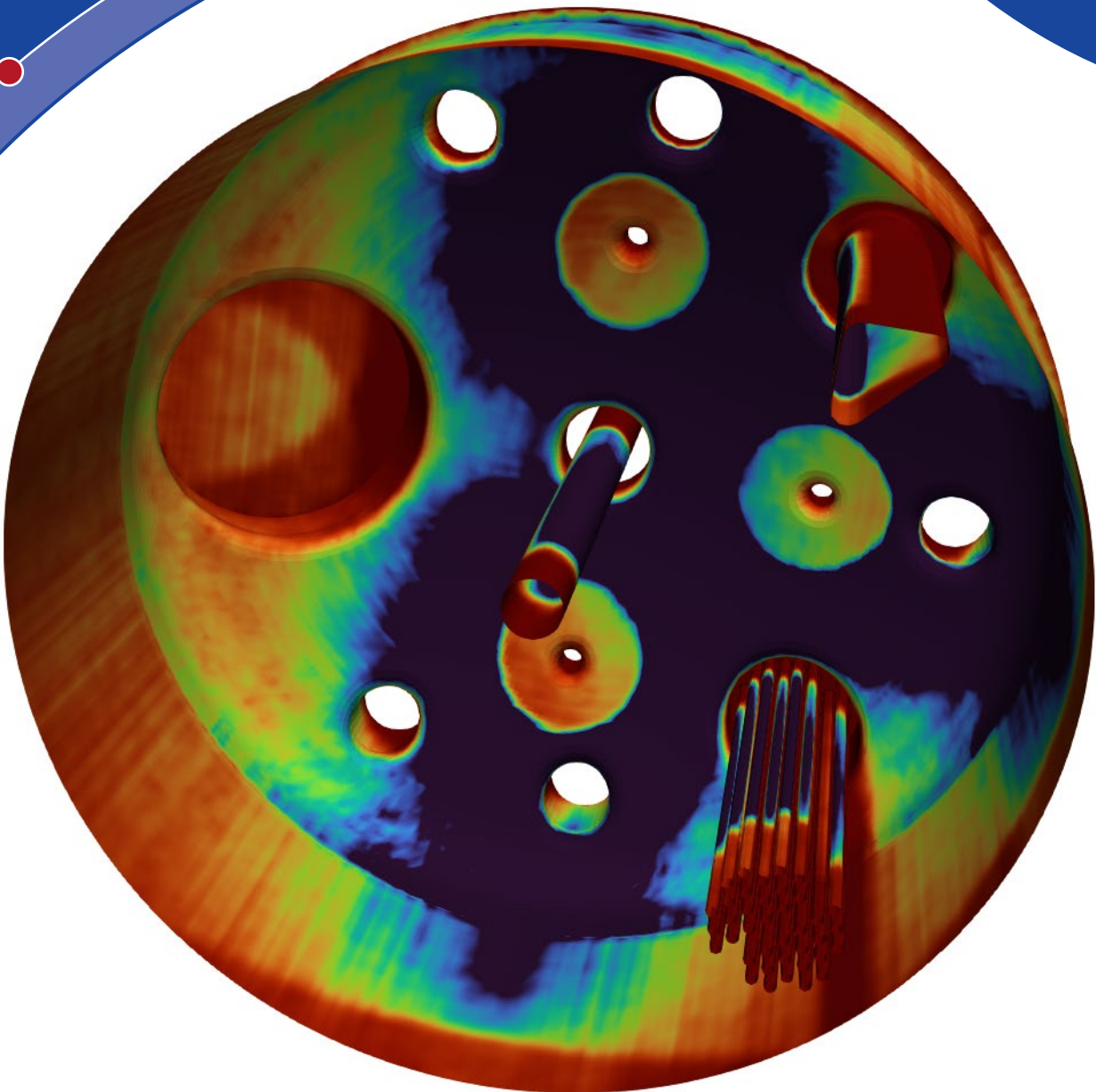
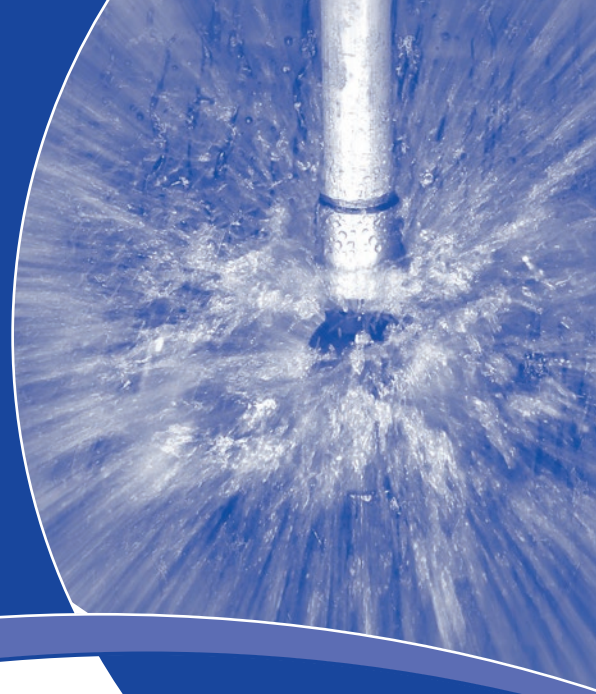


**THALETEC CIPSim**





**Simulation of CIP processes**



### Simulation of CIP cleaning of glass-lined equipment

With CIPSim, THALETEC offers an innovative service: The simulation of the processes in a glass-lined vessel when performing cleaning processes with the help of CIP-units.

The cleaning of glass-lined equipment can be done with the help of different CIP-units from THALETEC (CIP = Cleaning In Place):

- RotoCIPPY and StatiCippy (Flyer K082 )
- HydroCIPPY GL (Flyer K149 )
- FlushRing (Flyer K026 )
- CIP base flange (Flyer K064 )



The cleanability of a glass-lined tank, vessel and reactor depends on a large number of parameters. However, an essential criterion is the accessibility of the soiled surfaces by a spray jet.

### CIPSim: Testing and optimization in the computer

With the help of state-of-the-art software tools, THALETEC is able to simulate the spray pattern of selected cleaning systems (stationary and rotating spray systems such as RotoCIPPY, StatiCIPPY and HydroCIPPY GL). The most important boundary conditions can be quickly varied and optimized:

- Installation location of the cleaning system
- Installation position of the cleaning system
- Recommended minimum flow rate


With the help of the simulation, it is quickly possible to see at which points in the vessel spray shadows occur, how large they are and what causes them. The results can be used to adjust the boundary conditions and thus optimize the cleaning process.

### The THALETEC service CIPSim can therefore include:



- Modeling: If necessary, characterization of the CIP-system used by the customer. This time-consuming step is not necessary when using THALETEC CIP-units.

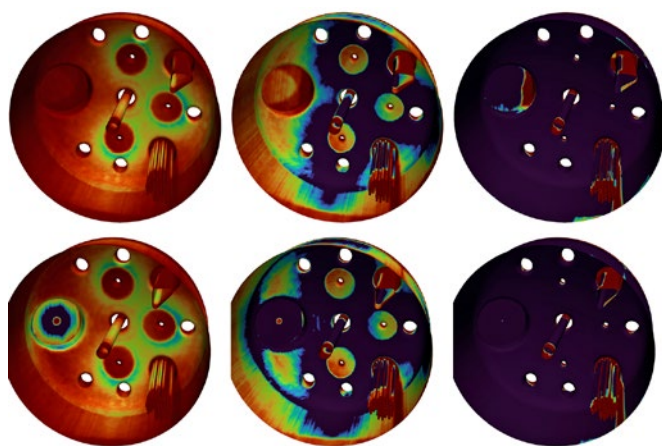
- Modeling of the glass-lined vessel to be considered in a 3D CAD system on the basis of an existing drawing or the measurement of the vessels on site
- Design of an equipment-specific CIP-system using the available CIP-units (see above).
- Simulation of the CIP cleaning process and identification of non-wetted surfaces
- Visualization of the cleaning and wetting processes
- Optimization of the installation location and the operating parameters of the CIP-units depending on the structural conditions and other boundary conditions

CIPSim can be usefully employed for

- the design of new equipment to be procured
- the modification of apparatus within the scope of remailing (Flyer K060 )
- the optimization of installed equipment

### Advantages

- Areas that are not optimally wetted by cleaning units are reliably detected
- Design measures for optimization can thus be taken even before the system is built
- In addition to spray lances such as the RotoCIPPY, StatiCIPPY and the retractable HydroCIPPY GL spray lance, other components are available to clean shaded areas
- Additional GMP concepts for optimization can be implemented as part of the new construction or remapping (see Flyer K085 ) and Poster K178 )
- Operating costs and costs for cleaning can be minimized



⬆ Upper row: Time course of the wetting process in the area of the upper bottom of a BE 6300 stirred tank (red: not wetted; blue: wetted) with 3x RotoCIPPY at the upper bottom. Bottom row: as above, but with additional RotoCIPPY in the manhole opening.

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