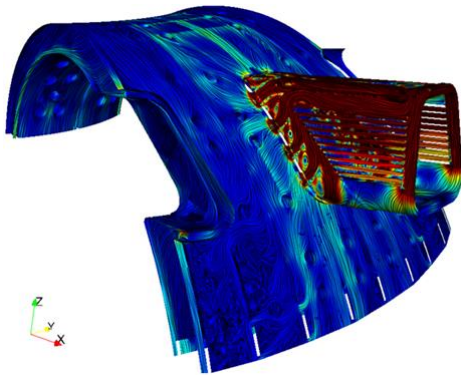




Simulating fluid dynamics in massive structures

F4E and IDOM have generated a unique CFD meshing methodology for extremely large calculations applied to massive structures. This technology can be used in applications in which the design of big structures or pieces and its fluid behavior has to be analyzed in detail, such as, energy, transport and aerospace sectors.



The technology

For extremely big complex structures in which liquid behavior plays a key role in the project (e.g. dams or wave power stations), the characterization of the physical structure and the behavior of the liquid flowing inside or around is fundamental for the optimal and safe design of the final solution. Used to evaluate the behavior of the cooling water in ITER interspace between the massive main chamber, this unique knowledge offer the possibility to perform high-quality CFD analysis applied to irregular sectors of massive structures.

High quality mesh and easy CFD software integration

The main complexity to allow accurate calculations of fluid dynamics in these massive structures is their meshing and the integration in the Computational Fluid Dynamics software simulation tools. Based on CFD ANSYS, this unique know-how offer the possibility to develop high quality mesh with high accuracy and resolution.

Design optimization applications in energy and transport

This technology can be used in applications in which the design of big structures or pieces and its fluid behavior has to be analyzed in detail such as: Aerospace. (liquid-propellant rockets to improve for instance design and calculate effects of slushing), nuclear plants, maritime transport of dangerous liquid goods, wave power stations, dam.

Collaboration opportunities

The technology package is available through rendering of engineering support services and expert advice for interpretation of results.

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