

RBF morph theory and applications case-history

Friday, September 27, 2013 10:00 AM (45 minutes)

An overview about mesh morphing and its benefits will be given with a specific focus on Radial Basis Functions (RBF) methods and the industrial tool RBF Morph, currently available as an add-on for the CFD solver ANSYS Fluent.

Standard applications of mesh morphing will be first explained; the tool is here used as an effective way to makes the original CFD model parametric with respect to the shape. Details on how such parametric models can be introduced in typical industrial workflow (shape or set-up optimization) will be given including CAD connection (STL targets and back to CAD) and flow sculpting (using adjoint solver of Fluent).

Advanced applications will be covered as well including: fluid structure interaction using 2-ways FSI and modal superposition, ice/snow accretion modeling, transient morphing with desired time histories.

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Session Classification: Computational Fluid Dynamics

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