

# NEiNastran *for Windows*

## NEiFluid Dynamics (Computational Fluid Dynamics Analysis)

### Overview

NEiFluid Dynamics (TMG) by Maya provides a comprehensive 3D computational fluid dynamics (CFD) analysis solution fully integrated with the NEiNastran Modeler. It solves a wide range of multi-physics problems involving fluid flow, heat transfer and advanced radiation modeling. The software models 3D fluid velocity, temperature and pressure by solving the Navier-Stokes equations for both steady-state and transient applications. NEiFluid Dynamics supports simulation for both laminar and turbulent fluid flow, low speed and high speed compressible flow, forced-convection, natural convection and mixed flows. The software is using a robust element-based finite volume and multi-grid solver for fast and reliable solutions.

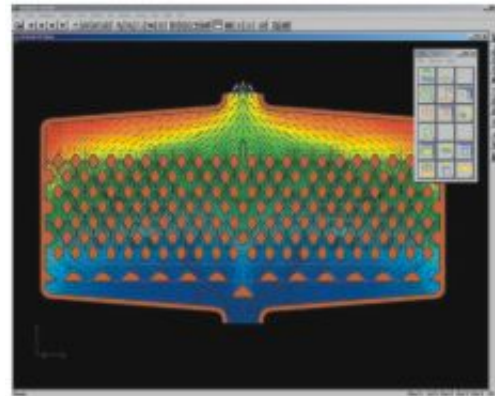
### Solution Types:

- Transient for Newtonian fluids
- Steady-State for Newtonian fluids

### Capabilities:

#### Solution Features:

- Surface convection, natural, forced and mixed flows, including multiple inlets, outlets, and internal flow boundary conditions
- Air flow turbulence modeling including K-E, fixed viscosity and mixing length models
- Internal and external fans and vents openings including fan/pump curves
- Low-speed, high-speed and compressible flows
- Rotating and translating surfaces
- Rotating frames of reference for rotating machinery
- Model symmetry and slip conditions
- Support for unconstrained mesh including tetrahedral, wedge and brick elements



- Volume porosity and flow resistances
- Disjoint meshing, support for flows across disconnected mesh-to-mesh volumes
- High order advection schemes
- Humidity and general scalars
- Thin wall modeling using shell elements for conduction, convection and radiation

### Unparalleled support:

- Leader in outstanding customer support
- Onsite and offsite training courses taught by experienced professional engineers
- Phone and email support staffed by a team of FEA specialists
- Optional consulting services available

**Noran Engineering, Inc** is aggressively focused on commitment to the customer. Detailed documentation, customized on-site training, and comprehensive technical support ensures that you will see immediate return on your investment.

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