

Autodesk® CFD vs.
Autodesk® CFD Advanced and Autodesk® CFD Motion

Comparison matrix

LEGEND:

✓ Feature supported

| | Autodesk® CFD | Autodesk® CFD Advanced | Autodesk® CFD Motion |
|--|---------------|------------------------|----------------------|
| DESIGN STUDY ENVIRONMENT (Software sold separately) | | | |
| MulticAD data exchange | ✓ | ✓ | ✓ |
| Design study automation | ✓ | ✓ | ✓ |
| Multi-scenario design review center | ✓ | ✓ | ✓ |
| Model-centric interface | ✓ | ✓ | ✓ |
| Customizable material databases | ✓ | ✓ | ✓ |
| Heat sink, compact thermal, LED, and TEC models | ✓ | ✓ | ✓ |
| Fan, porous media, HX, TIM, and PCB models | ✓ | ✓ | ✓ |
| Non-Newtonian fluid materials | ✓ | ✓ | ✓ |
| Point, wall, and bulk-flow data extraction | ✓ | ✓ | ✓ |
| Pre- and post-processing API | ✓ | ✓ | ✓ |
| Customizable report generator | ✓ | ✓ | ✓ |
| Web and mobile storage, sharing, and viewing | ✓ | ✓ | ✓ |
| FSI with Simulation Mechanical | ✓ | ✓ | ✓ |
| Simulation Data Management with Vault | ✓ | ✓ | ✓ |
| Export results to Showcase, 3DS max, VRED, Maya | ✓ | ✓ | ✓ |
| FLUID FLOW | | | |
| 2D and 3D Cartesian | ✓ | ✓ | ✓ |
| 2D axisymmetric | ✓ | ✓ | ✓ |
| Laminar flow | ✓ | ✓ | ✓ |
| Turbulent flow | ✓ | ✓ | ✓ |
| Incompressible flow | ✓ | ✓ | ✓ |
| Subsonic flow | ✓ | ✓ | ✓ |
| Compressible flow | | ✓ | ✓ |
| Steady state (time-independent) | ✓ | ✓ | ✓ |
| Transient (time-varying) | | ✓ | ✓ |
| Lagrangian particle tracking | ✓ | ✓ | ✓ |
| Two-fluid scalar mixing | | ✓ | ✓ |
| Two-phase flows (humidity and steam) | | ✓ | ✓ |
| Nucleate Boiling | | ✓ | ✓ |
| Height of fluid | | ✓ | ✓ |

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|---|---------------|---------------------------|-------------------------|
| Free surface (Volume Of Fluid) | | ✓ | ✓ |
| Compressible liquid (water hammer) | | ✓ | ✓ |
| Cavitation | | ✓ | ✓ |
| HEAT TRANSFER | | | |
| Conduction and conjugate heat transfer | ✓ | ✓ | ✓ |
| Forced, natural, mixed convection | ✓ | ✓ | ✓ |
| Thermal comfort calculation | ✓ | ✓ | ✓ |
| Temperature-dependent heat source | ✓ | ✓ | ✓ |
| Radiation heat transfer | | ✓ | ✓ |
| Radiation through transparent media | | ✓ | ✓ |
| Solar loading | | ✓ | ✓ |
| Temperature-dependent emissivity | | ✓ | ✓ |
| Joule heating (temperature-dependent resistivity) | | ✓ | ✓ |
| INTELLIGENT MESHING | | | |
| Geometry mesh diagnostics | ✓ | ✓ | ✓ |
| Automatic mesh sizing | ✓ | ✓ | ✓ |
| Solution adaptive mesh | ✓ | ✓ | ✓ |
| Global and local size adjustment | ✓ | ✓ | ✓ |
| Boundary-layer mesh enhancement | ✓ | ✓ | ✓ |
| Interactive mesh-refinement regions | ✓ | ✓ | ✓ |
| Extrusion meshing | ✓ | ✓ | ✓ |
| Mesh growth-rate control | ✓ | ✓ | ✓ |
| Fluid gap and thin solid refinement | ✓ | ✓ | ✓ |

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|---|---------------|------------------------|----------------------|
| TURBULENCE MODELS | | | |
| K-epsilon | ✓ | ✓ | ✓ |
| K-epsilon with intelligent wall formulation | ✓ | ✓ | ✓ |
| Low Reynolds number K-epsilon | ✓ | ✓ | ✓ |
| SST k-omega | ✓ | ✓ | ✓ |
| SST k-omega SAS (Scale Adaptive Simulation) | ✓ | ✓ | ✓ |
| SST k-omega DES (Detached Eddy Simulation) | ✓ | ✓ | ✓ |
| RNG | ✓ | ✓ | ✓ |
| Eddy viscosity | ✓ | ✓ | ✓ |
| Mixing length | ✓ | ✓ | ✓ |
| Automatic turbulence startup | ✓ | ✓ | ✓ |
| Laminar | ✓ | ✓ | ✓ |
| SOLID BODY MOTION | | | |
| User prescribed or fluid driven motion | | | ✓ |
| Multiple rotating frame of reference (turbomachinery) | | | ✓ |
| Linear | | | ✓ |
| Angular | | | ✓ |
| Combined linear and angular | | | ✓ |
| Combined orbital and angular | | | ✓ |
| Nutating | | | ✓ |
| Sliding vane | | | ✓ |
| Unconstrained (6 DOF) motion | | | ✓ |
| HIGH-PERFORMANCE SOLVING (INCLUDED) | | | |
| Multicore single machine | ✓ | ✓ | ✓ |
| Microsoft HPC cluster | ✓ | ✓ | ✓ |
| Remote solving | ✓ | ✓ | ✓ |
| Parallel solving on multiple machines* | ✓ | ✓ | ✓ |

* Requires multiple solver licenses.