Release 2022 R1 Highlights Ansys FENSAP-ICE



Vapor, air, particle energy coupling

Description

Full thermal coupling between air, water vapor, droplets and ice crystals undergoing heating and phase change

Benefits

- Captures air cooling effect due to melting and evaporating particles
- Only solves the energy equation for air to significantly save computational time
- Improves engine icing simulation accuracy
- Essential for simulating icing wind tunnel droplet spray freeze-out



Air temperature drop in engine core flow due to thermal coupling with ice crystals



Multi-shot icing with 2.5D remeshing

Description

2.5D grids that are one-element-thick can now be generated by the automated Fluent Meshing workflow for 2D multishot icing simulations

Benefits

- 2D ice shapes no longer required to be computed using expensive fully 3D grids
- Mesh generation and solver calculation times are significantly reduced
- Big savings in data storage and post processing times
- Detailed parametric studies on airfoil icing can be readily conducted



10-minute glaze ice simulation on a three-element-airfoil

