

TAItherm Top Use Cases

Heat Transfer Software by ThermoAnalytics, Inc.



Altair

Partner Alliance

HEAT SHIELD THERMAL DESIGN

Challenge

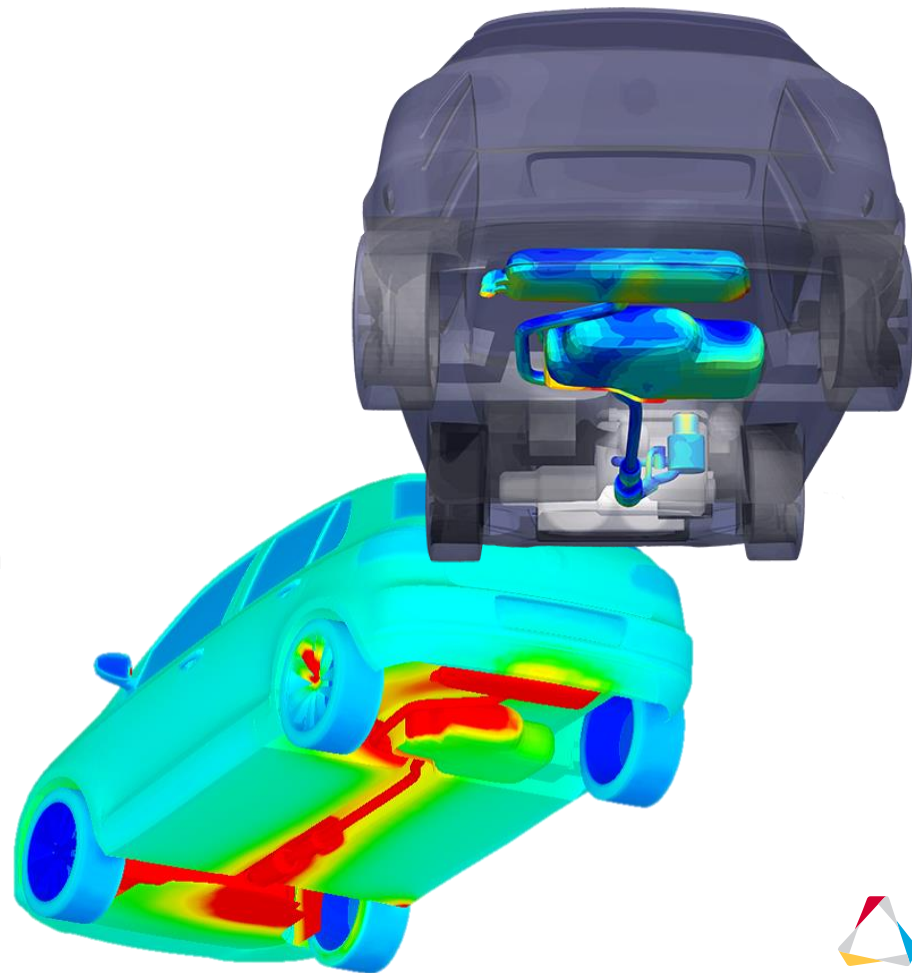
- Create a compact and streamlined design
- Design heat shields and thermal protection strategies for temperature sensitive components

Solution

- TAItherm analyzes complex heat transfer paths
- TAItherm helps users visualize and rapidly design thermal solutions for exhaust systems

Results

- Thermal protection of temperature sensitive parts located near heat sources
- Optimized shields to reduce cost and weight



SOLAR & NATURAL ENVIRONMENT THERMAL ANALYSIS

Challenge

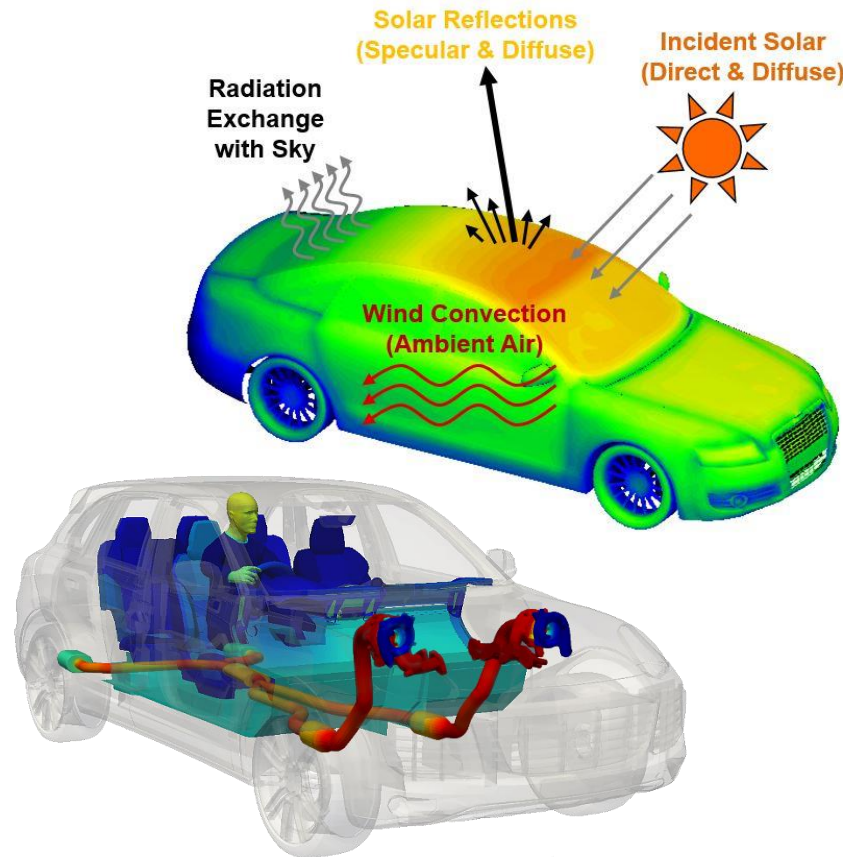
- Assess cost and performance of cabin components to manage solar loads into cabins or buildings
- Analyzing HVAC system design

Solution

- TAItherm transient solver can solve large and complex thermal environments for varying environmental conditions over long time scales
- Use TAItherm to evaluate effect of insulation, reflective glass, and materials on solar loads

Results

- Comprehensive thermal analysis of cabins under realistic transient conditions
- Optimized design for diverse environments



BRAKE THERMAL DESIGN

Challenge

- Design and optimize brake thermal system performance and packaging
- Prevent warpage of rotor or brake line thermal failure

Solution

- CFD analysis of cooling airflows surrounding brakes
- TAItherm analyzes brake drive cycles and helps design thermal solutions
- Transient structural simulation using OptiStruct

Results

- Optimizing performance of brake systems to evaluate design trade-offs, cost, and weight reduction technology

