



ThermoAnalytics®

Human Thermal Simulation

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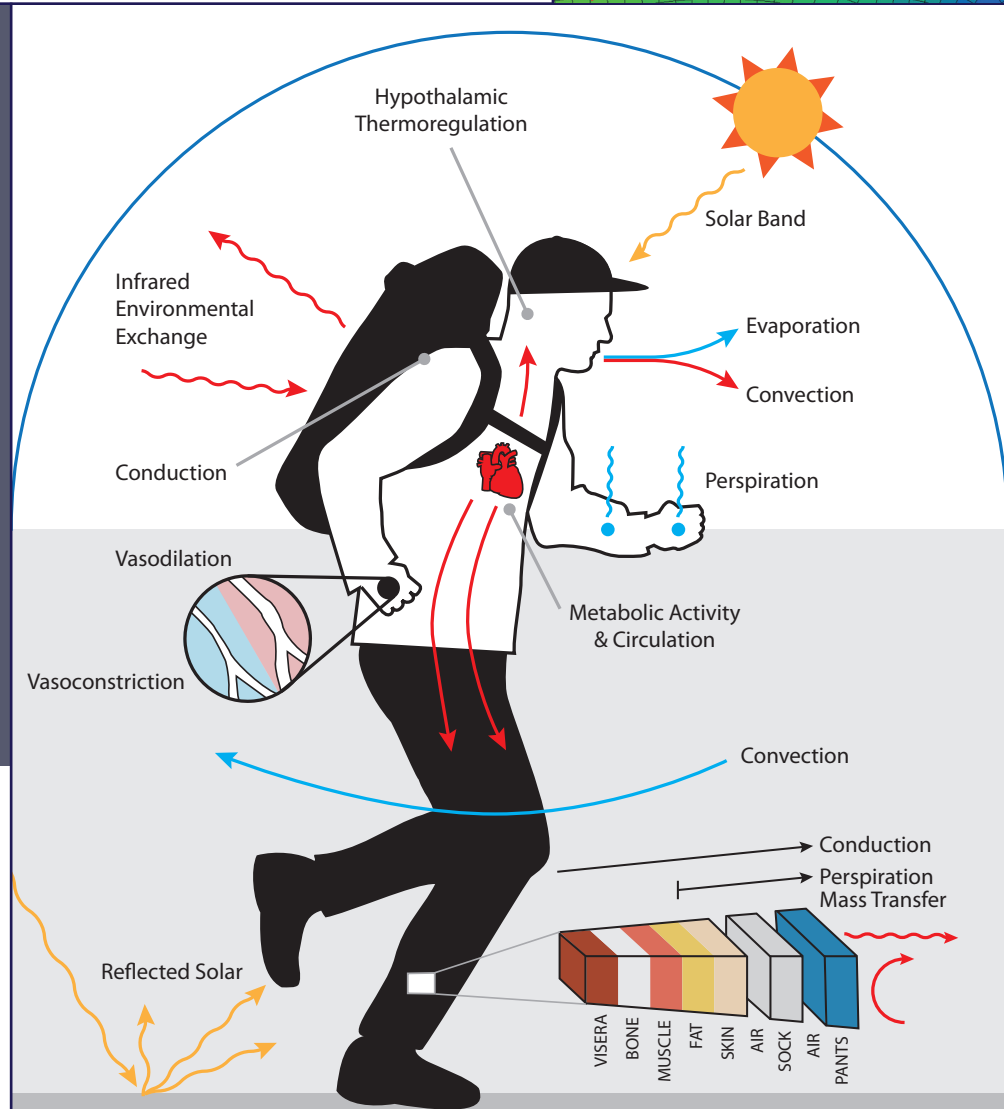
The Human Thermal Module is an advanced plug-in for analyzing human effectiveness within complex environments: indoor, outdoor, and in transportation systems. Our Human Thermal Module plug-in is compatible with all of our simulation packages and allows users to place virtual humans into these environments and compute

thermal sensation and comfort indexes. Full radiant, convective, and conductive heat transfer is accounted for, including localized thermoregulatory responses, such as perspiration, blood flow, and metabolic heating. The Human Thermal Module provides tools to design and optimize heating/cooling systems, improve clothing design and much more.

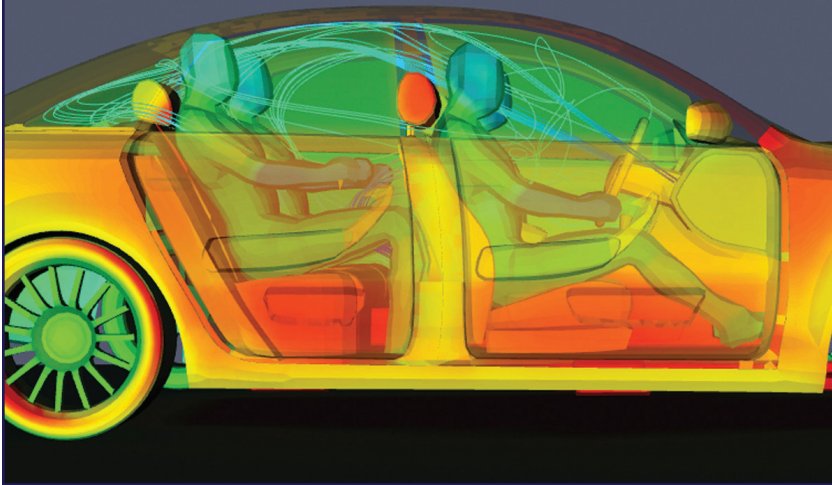


Segmental Human Model

The virtual human models have local body segments (e.g. upper arm, front chest, foot, etc) so users can apply layers of clothing and local boundary conditions. This allows users to evaluate localized design strategies and their respective effects on perceived thermal sensation and comfort.



Human Thermal Analysis



Features:

- Support for user defined geometry
- Fully integrated physiological properties and thermoregulatory model
- Integrated clothing database
- Nodal definition of tissue and clothing properties
- Support for user defined data
- Outputs physiological and environmental based metrics
- Visualization of temperatures, heat rates, sensation and comfort

Human Thermal Model

The Human Thermal Module predicts the human thermoregulatory response to an environment and solves for tissue, skin, and clothing temperatures across the entire body. The resulting temperatures can then be used to determine perceived thermal sensation and comfort.

HUMAN GEOMETRY

Choose from the existing database of human geometry or import your own.

PHYSIOLOGY

Use the embedded description of the 50th percentile male, scale to represent any human from 1st to 99th percentile or import your own physiological data.

ACTIVE THERMOREGULATION

Sophisticated thermo-physiology model that is fully integrated with our advanced environment model for predicting; metabolic heating, shivering and sweating, respiration and peripheral vasomotion in steady state and transient conditions.

MODEL OUTPUTS

- Temperature: skin, core, blood, etc.
- Heat Rates: evaporation, respiration, metabolic, etc.
- Physiological: dilatation/constriction, sweating, shivering, etc.
- Comfort: Berkeley sensation and comfort, PMV/PPD, EHT, MRT and more!

PROTECTION



ENVIRONMENTAL



SPORT



Sensation

