JOS (Joint System Thermoregulation-Model)

Perform thermoregulation analysis using CFD and JOS

What is JOS?

JOS computes the temperature and quantity of perspiration of a human body. JOS models a human body by dividing it into seventeen body segments to simulate the morphological and physiological characteristics and thermoregulation function of each segment by solving heat balance equations.

Analysis of Human Body Temperature While Wearing a Wearable Device

Factors Considered in the JOS Model

Heat Exchange Within a Body

Notes

The JOS function can be used to perform human body thermoregulation analysis in non-uniform thermal environments such as a vehicle interior or a semi-enclosed outdoor space. These are difficult scenarios to evaluate using traditional thermoregulation indices. They are also difficult to experimentally evaluate when the human subject is wearing wearable devices. JOS-2 uses a head segment consisting of four layers to account for the head’s high heat capacity. Using JOS-2 engineers can conduct faster analyses with improved accuracy.