Human Physiological Modeling Techniques for Predicting Thermal Comfort

Accurate assessment of thermal comfort requires comprehensive analysis of the environmental effects contributing to the heat transfer to and from the human body. A common comfort evaluation approach is to find a direct correlation of comfort to environmental conditions (e.g., air temperature, relative humidity, clothing), thus implicitly accounting for the relationship between physiological response and thermal comfort. An alternate approach is to explicitly correlate comfort to basic physiological response (e.g., skin and core temperature), thereby separating the thermal analysis portion of the problem from the more subjective comfort analysis portion. This presentation will review state-of-the-art simulation techniques for predicting human thermophysiological response and how it relates to thermal comfort.