

O08-5**Study on the improvement of CFD prediction of the heat transfer characteristics of a thermal manikin part 2: Prediction of convective heat transfer characteristics**

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Abstract: The part 1 examined the estimative method of radiative heat transfer of the numerical manikin to improve the predictive accuracy. This paper focuses on the accuracy of the convective heat transfer simulation. As an initial phase of this study, coupling of the k - ε model with Standard wall function has done. As a result this calculation does not show good agreement. There, various Low Re number models which involve the most popular model, i.e. SST k - ω model were surveyed. Particularly we focused on the flow structure in the boundary layer. In conclusion, the essential ideas to calculate the convective heat transfer characteristics in practical accuracy have been derived.

Key words: Thermal environment, Simulation

O09-1**The psychological effects of entering a cool room in summer**

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Abstract: In Japan, 28°C set point of air-conditioning is recommended in summer for the energy conservation of office and so on. However, 28°C is neutral temperature at nude and sitting rest condition, and it is slightly hot for office occupants. Therefore, those who enter a room from outdoor cannot return to neutral condition in a short time, and feel dissatisfaction easily. Then, Kuno proposed "Cool Room" concept. The purpose of this study is to investigate the effect of cool room to the occupants who return from outside the building. In the experiments, subjects firstly stayed outdoor for 30 minutes. Next, they stayed in the first room set at 28°C, 50%RH for 5 minutes. After that, they moved to the cool room set at 24°C, 50%RH or 26°C, 50%RH, stayed there for 5, 10 or 20 minutes and went back to the first room and stayed there for 60 minutes. From the results of psychological responses at the first room, it is confirmed that some people need the cool room and others does not. Moreover, the effect of the cool room is confirmed for male and female who need it.

Key words: Thermal environment, Hot, Psychological response