

عنوان مقاله:

Determining the local thermal sensitivity of females and males under confluent jet ventilation -Experimental study

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خلاصه مقاله:

Confluent jets issuing from different apertures in the same plane flow in parallel directions then at a certain distance downstream they coalesce and move as a single jet. Achieving proper thermal comfort involves considering the sensation of sensitive segments. So, confluent jet ventilation, as a new energy-efficient ventilation system providing high indoor air quality, was utilized in this study to experimentally determine males' and females' local thermal sensitivity in a climate chamber. To assess the thermal conditions of the males and females with typical work wear of Iran, the local/overall thermal sensation of different body parts was investigated at three different supply air temperatures of ۱۶, ۲۴, and ۳۲ . During the tests, ۲۸ volunteers were asked to express their local thermal sensations. Ultimately, local thermal sensitivities of segments under cooling and warming were derived from local thermal sensations under steady-state conditions. The results revealed that females were more sensitive than males. For instance, thermal sensitivities of head and arm were ۰.۲۹ units higher for females than for males. Additionally, findings demonstrated head and thigh as the most and least sensitive segments under warming for both genders. However, arm was the most sensitive segment for females under cooling mode.

کلمات کلیدی:

Confluent Jet, Thermal Sensation, Thermal Sensitivity, Ventilation

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