عنوان مقاله:

3-D Simulations of Indoor Airflow and Temperature Field with a Radiative and Convective Heater

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خلاصه مقاله:

Thermal comfort in buildings is an important property for the quality of indoor environments, but also for the quantity of energy to be supplied by heating equipment. It is therefore important to understand and control the heat exchanges that come into play in the electric heaters. The electric heaters transfer their energy to the environment by convection and radiation. This paper presents a 3D numerical study of turbulent and steady airflow, in a living space (width 3.4m, 4.5m length and 2.6m height). The influence of the electric heater position in the room will be reviewed to improve the thermal comfort and energy performance of the system. Transport equations of mass, momentum and energy are solved numerically using the finite volume method. Also, the radiative heat exchanges between surfaces are considered.

کلمات کلیدی:

Thermal comfort, Electric heater, Natural convection, Radiation, CFD

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