THREE-DIMENSIONAL NONGRAY RADIATIVE HEAT TRANSFER IN CONJUNCTION WITH TURBULENT NATURAL CONVECTION USING DOREM AND LES

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ABSTRACT. Three-dimensional nongray radiative heat transfer in a fire room will be analyzed to quantify radiative effects on temperature distribution and flow pattern in conjunction with turbulent natural convection. The Discrete Ordinates Radiation Element Method, which is radiative transport solver, is combined with Computational Fluid Dynamics, including the Large Eddy Simulation. From the conjugate simulations, the importance of 3D nongray radiative heat transfer on turbulent natural convection will be described.

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