

Investigation of Airflow inside Floor Convector and Its Surrounding

Josef Egert, Karel Frana

Department of Power Engineering Equipment, Faculty of Mechanical Engineering, Technical University of Liberec. Studentská 1402/2, 461 17 Liberec 1. Czech Republic. E-mail: j.egert@outlook.com, karel.frana@tul.cz

The article describes experimental and numerical investigation of airflow inside the floor convector. Analysis was divided to two parts. First part was airflow visualization. This part was realized in two areas. At first the visualization was realized in the area between a fan outlet and a heat exchanger inlet using a continual laser and a video camera. Then the visualization was realized in the region above the heat exchanger outlet with a Particle image velocimetry. At last the flow behavior in domain between the fan outlet and the floor convector outlet was analyzed with a numerical simulation. Commercial software ANSYS Fluent in version 15.0 was used. Results from the numerical simulation and the experiments were compared and the flow behavior was examined.

Keywords: floor convector, visualization, particle image velocimetry, numerical simulation

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