An algorithm of velocity field evaluation via temperature field mesurement on the basis of streamline-defined coordinates

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Abstrak

ABSTRAK
A new algorithm is presented for evaluating the velocity field of the heat convection flow from a vertical solid flat plate using the temperature field. By using the coordinate transformation of Cartesian coordinates, to coordinates defined via streamlines, and visible in such coordinate approximations, it is possible to express the basic flow fields in terms of the temperature gradients only. After discretization, we formulate approximated sufficient finite difference formulas to evaluate the velocity field using the experimental data.