INVERSE RADIATIVE-CONDUCTIVE PROBLEMS FOR ESTIMATING MATERIAL PROPERTIES

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ABSTRACT. In practice, we face the situations when it becomes impossible to measure thermophysical and radiation properties of analyzed materials (for example, composites) directly. Most often, the only way-out to overcome these difficulties is to make indirect measurements. This type of measurements usually formulated as the solution of inverse heat transfer problems and treated as ill-posed in mathematical sense with their main details manifested as the solution instabilities. Therefore, there is a need in the use of special regularizing methods to solve these problems. The objective of this paper is to develop new approach for estimating the thermophysical and radiative properties of advanced materials using techniques based on inverse methods.