



THE INVERSE HEAT CONDUCTION PROBLEM (IHCP) AND ITS SOLUTION

In recent times the inverse heat conduction problem and its solutions has attracted many researchers in academic institutes and industries because of its many practical applications. Some of these applications are: determination of boundary heat fluxes in reentry space vehicles, determination of heat transfer coefficients between the mould and the metal in casting process, determination of heat transfer coefficient in many processes involving heat transfer etc..

IHCP can also be used in the regular laboratory in order to evaluate the unknown boundary conditions in free convection, forced convection, boiling and condensation heat transfer processes, the contact resistance in heat flow through composite medium etc. One of the methods widely used to solve IHCP is the use of the finite element method. Dr.T.S.Prasanna Kumar, who was a former Professor at IIT Madras, with his rich research and industry experience, has developed a code using the finite element method to solve IHCP. This software is the outcome of his life time experience in the field of applications of IHCP for various manufacturing processes. The enclosed brochure gives the details of this software which is commercially called as "InverseSOLVER".

We have used this software successfully in solving a few problems of practical applications. We feel that the use of this software by UG and PG students of Mechanical engineering, Metallurgical engineering, Automobile engineering, Chemical engineering and Aero Space engineering disciplines in their project work will lead to solving many unsolved complex problems of practical interest and publishing their findings in peer reviewed international journals.



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