

# Download Finite Difference Methods In Heat Transfer

In mathematics, finite-difference methods (FDM) are numerical methods for solving differential equations by approximating them with difference equations, in which finite differences approximate the derivatives. FDMs are thus discretization methods. FDMs convert a linear (non-linear) ODE/PDE into a system of linear (non-linear) equations, which can then be solved by matrix algebra techniques. Here is an old scicomp.SE question that answered some of your question: What are criteria to choose between finite-differences and finite-elements? In my humble opinion, FEM is the most flexible one in terms of dealing with complex geometry and complicated boundary conditions. Introduction to Finite Difference Methods Since most physical systems are described by one or more differential equations, the solution of differential equations is an integral part of many engineering design studies. Applied Mathematics. 2011; 1(2): 90-98 DOI: 10.5923/j.am.20110102.15 Conjugate Transient Free Convective Heat Transfer from a Vertical Slender Hollow Cylinder with Heat