Record Nr. UNINA9910829025403321 Autore Reddy J. N (Junuthula Narasimha), <1945-> Titolo The finite element method in heat transfer and fluid dynamics / / by J. N. Reddy and D.K. Gartling Boca Raton, FL:,: CRC Press, an imprint of Taylor and Francis,, 2010 Pubbl/distr/stampa 0-429-11142-8 **ISBN** 1-4398-8257-6 Edizione [Third edition.] Descrizione fisica 1 online resource (515 p.) Collana CRC Series in Computational Mechanics and Applied Analysis Disciplina 620.106 Soggetti Fluid dynamics - Mathematical models Heat - Transmission - Mathematical models Finite element method Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references at the end of each chapters. Nota di contenuto Front cover; Contents; Preface to the Third Edition; Preface to the Second Edition; Preface to the First Edition; About the Authors; Chapter 1: Equations of Heat Transferand Fluid Mechanics; Chapter 2: The Finite Element Method; Chapter 3: Conduction Heat Transfer; Chapter 4: Flows of Viscous Incompressible Fluids; Chapter 5: Coupled Fluid Flowand Heat Transfer; Chapter 6: Non-Newtonian Fluids; Chapter 7: Multiphysics Problems; Chapter 8: Parallel Processing; Appendix A: Computer ProgramFEM2DHT; Appendix B: Solution of Linear Equations; Back cover As Computational Fluid Dynamics (CFD) and Computational Heat Sommario/riassunto Transfer (CHT) evolve and become increasingly important in standard engineering design and analysis practice, users require a solid understanding of mechanics and numerical methods to make optimal use of available software. The Finite Element Method in Heat Transfer and Fluid Dynamics, Third Edition illustrates what a user must know to ensure the optimal application of computational procedures particularly the Finite Element Method (FEM)—to important problems associated with heat conduction, incompressible viscous flows, and

convection heat transfer. This book follows the tradition of the

bestselling previous editions, noted for their concise explanation and

powerful presentation of useful methodology tailored for use in simulating CFD and CHT. The authors update research developments while retaining the previous editions' key material and popular style in regard to text organization, equation numbering, references, and symbols.