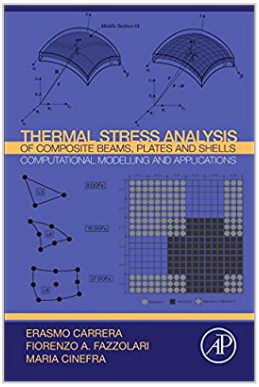

Thermal Stress Analysis of Composite Beams, Plates and Shells: Computational Modelling and Applications

By Erasmo Carrera, Fiorenzo A. Fazzolari, Maria Cinefra

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Thermal Stress Analysis of Composite Beams, Plates and Shells: Computational Modelling and Applications presents classic and advanced thermal stress topics in a cutting-edge review of this critical area, tackling subjects that have little coverage in existing resources. It includes discussions of complex problems, such as multi-layered cases using modern advanced computational and vibrational methods.

Authors Carrera and Fazzolari begin with a review of the fundamentals of thermoelasticity and thermal stress analysis relating to advanced structures and the basic mechanics of beams, plates, and shells, making the book a self-contained reference. More challenging topics are then addressed, including anisotropic thermal stress structures, static and dynamic responses of coupled and uncoupled thermoelastic problems, thermal buckling, and post-buckling behavior of thermally loaded structures, and thermal effects on panel flutter phenomena, amongst others.

- Provides an overview of critical thermal stress theory and its relation to beams, plates, and shells, from classical concepts to the latest advanced theories
- Appeals to those studying thermoelasticity, thermoelastics, stress analysis, multilayered structures, computational methods, buckling, static response, and dynamic response
- Includes the authors' unified formulation (UF) theory, along with cutting-edge topics that receive little coverage in other references
- Covers metallic and composite structures, including a complete analysis and sample problems of layered structures, considering both mesh and meshless methods
- Presents a valuable resource for those working on thermal stress problems in mechanical, civil, and aerospace engineering settings

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About the Author
Erasmo Carrera is a leading expert on advanced structural models for thermal stress analysis. He has published more than 30 articles on thermal stress problems, is an editorial board member for Journal of Thermal Stresses and editor-in-chief of the International Journal of Advances on Aircraft and Spacecraft Sciences

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