1. Record Nr. UNINA9910984591903321 Autore Öchsner Andreas **Titolo** The Fundamental Equations of Beams and Plates: A Comparative Representation / / by Andreas Öchsner Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2025 Pubbl/distr/stampa **ISBN** 9783031762765 Edizione [1st ed. 2025.] Descrizione fisica 1 online resource (XI, 58 p. 24 illus., 15 illus. in color.) Collana SpringerBriefs in Continuum Mechanics, , 2625-1337 Disciplina 620.1 Soggetti Mechanics, Applied Continuum mechanics **Engineering Mechanics Continuum Mechanics** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto 1 Fundamentals of Continuum Mechanical Modeling -- 2 Thin Beams and Plates -- 3 Thick Beams and Plates -- 4 Comparison of the Approaches -- Appendix: Bending of Beams in the xy-Plane. Sommario/riassunto This book focuses on beam and plate elements, essential components found across various fields from automotive and aerospace engineering to civil engineering structures. It offers a comparative exploration of the fundamental equations governing thin and thick beams, as well as thin and thick plates, providing readers with a clear understanding of these foundational structural elements. By explaining the three fundamental equations of continuum mechanics—equilibrium. kinematics, and constitution—the text culminates in a unified differential equation framework, offering both beginners and experienced practitioners a fresh perspective on structural member

modeling.