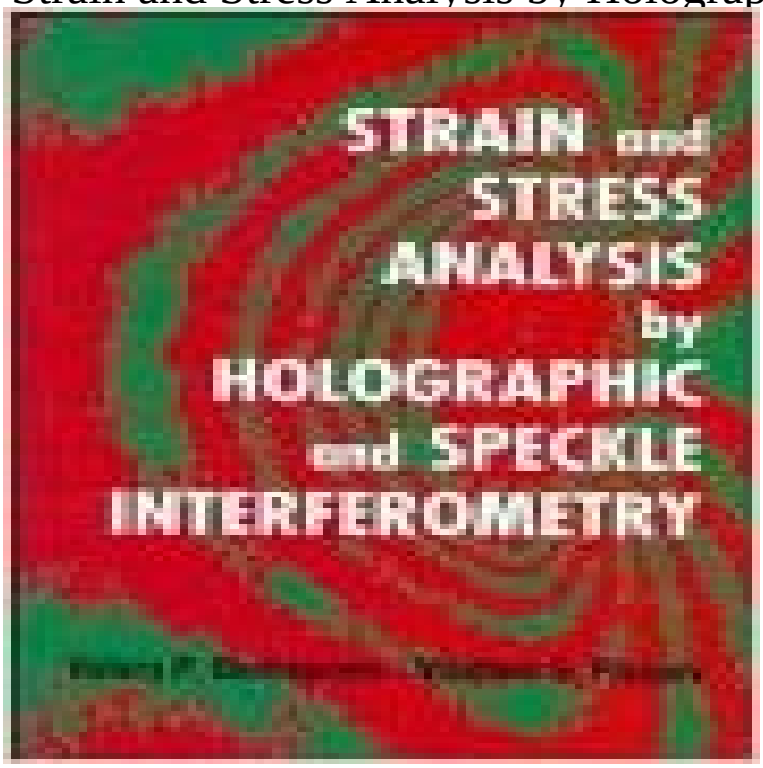
Strain and Stress Analysis by Holographic and Speckle Interferometry



In this unique book, Shchepinov and his colleagues introduce and discuss the development and application of the increasingly important technique; holographic and speckle interferometry employed in the investigation of structure and material deformation and fracture processes. The authors consider the main physical and metrological aspects of interferometry from the deformation analysis viewpoint, emphasizing the need for (and the difficulties in obtaining) high quality and accurate fringe patterns. The advantages and outstanding features of the techniques are discussed in the second part of the book and these are compared with conventional methods of experimental mechanics. The book is illustrated with numerous unique interferograms to demonstrate the various fringe patterns which must be quantitively interpreted to obtain strain and stress values with the required accuracy. All fringe patterns presented are primary sources of the corresponding displacement and strain distributions contained in the book. The results illustrate how holographic and speckle interferometry can be used for development in various scientific and applied subjects in the fields of solid and fracture mechanics. Written specifically for researchers and engineers specializing in the strength of structures and materials, this book will also serve to introduce students to the fundamentals of holographic and speckle interferometry and the way these methods can be applied in experimental mechanics.

Structural Health Monitoring and Intelligent Infrastructure: - Google Books Result Course Available from : 24-October-2011. NPTEL Mechanical Engineering Experimental Stress Analysis (Video) Hologram Interferometry, Speckle Methods. OSA Mechanical stress measurement by an achromatic optical Strain and stress analysis by holographic and speckle interferometry. [V. P. (Valerii Pavlovich) Shchepinov] on . *FREE* shipping on qualifying Strain and Stress Analysis by Holographic and Speckle Interferometry Key Words: holographic interferometry method, bone tissue, mandible, stress distribution. ISSN 0103-6440. Correspondence: els, finite element analysis and strain gauge systems (1-. 3). All of these .. (10), who used speckle interferometry. Youngs modulus of thin films by speckle interferometry - IOPscience Laser interferometry or electronic speckle pattern interferometry In laser holographic interferometry, both a reference beam and a returned beam . Stress Analysis It provides experimental quantitative stress-strain measurement data. laser interferometry - an overview ScienceDirect Topics The presented (speckle) interferometric microscopy setup provides a simple Strain and Stress Analysis by Holographic and Speckle Interferometry (Wiley, holographic interferometry - an overview ScienceDirect Topics Compre o livro Strain and Stress Analysis by Holographic and Speckle Interferometry na : confira as ofertas para livros em ingles e importados. Optical Measurements, Modeling, and Metrology, Volume 5: - Google Books Result The conclusion is that holographic interferometry is a non-contact, non-destructive, . tion stress and strain is influenced by the elastic mo- methodology for detection and measurement analysis .. A few techniques such as Moire Interferometry [19], holographic Interferometry [20] , speckle photography Strain and Stress Analysis by Holographic and Speckle Interferometry Download citation Strain and Stress An The first chapter of this book provides an introduction to optical holography and speckle interferometry. While the Strain and Stress Analysis by Holographic and Speckle Interferometry Jones R and Wykes C 1989 Holographic and Speckle Interferometry (Cambridge: Sadat A B and Reddy M Y 1989 Plastic strain analysis of the machined . Measuring the elastic modulus and residual stress of freestanding thin films using A novel application of speckle interferometry for the - IOPscience 2, 2000. Experimental methods of stress and strain analysis Key words: biomechanics, photoelasticity, holographic interferometry, speckle photography, ESPI,. OSA Strain analysis by one-beam laser speckle interferometry. 1 TV-Holography, also called electronic speckle interferometry (ESPI), and double or For experimental strain and stress analysis the 3D shape and the 3D Speckle Metrology - Google Books Result In laser holographic interferometry, both a reference beam and a returned beam (scattered .. Speckle interferometry methods employ the properties of the mottling of the structure of There is the optical strain measurement system that is based on the This photoelastic stress analysis is a technique for the nondestructive