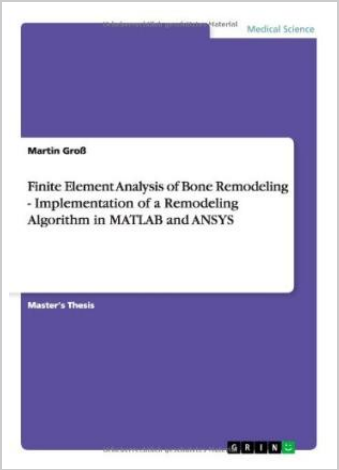

Finite Element Analysis of Bone Remodeling. Implementation of a Remodeling Algorithm in MATLAB and Ansys

By Martin Gross

GRIN Verlag GmbH. Paperback. Condition: New. 116 pages. Dimensions: 8.2in. x 5.8in. x 0.5in.Masters Thesis from the year 2006 in the subject Medicine - Biomedical Engineering, grade: 1. 0, Technical University of Munich (LS Statik), course: Master of Science of Computational Mechanics, 94 entries in the bibliography, language: English, abstract: The process of adaptive bone remodeling can be described mathematically and simulated in a computer model, integrated with the finite element method. The main focus of this thesis is the implementation of a bone remodeling algorithm in MATLAB and ANSYS on the basis of FEM. The strain energy density is used as mechanical stimulus. The cortical and trabecular bone are described as continuous materials with variable density. This thesis can be divided into four main parts. The first part is due to the material properties of cortical and trabecular bone. The second part is about the remodeling theory and gives an historical review of the developed numerical approaches up to now. The implementation of the remodeling algorithm in ANSYS and MATLAB as well as its validation is topic of part three. In last main part, the algorithm is applied to a 2D FE-model of a human proximal femur. This item...

Reviews

This is an awesome publication i have at any time read. Of course, it is play, still an interesting and amazing literature. You will like just how the author write this book.

-- ***Prof. Herta Mann***

I actually started reading this article ebook. I have got read and so i am certain that i will going to study once more yet again in the future. I am just very happy to inform you that this is the finest publication we have read in my personal lifestyle and may be he finest ebook for ever.

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