Scientific Data Analysis: An Introduction to Overdetermined Systems PDF

Scientific Data Analysis: An Introduction to Overdetermined Systems by Richard L. Jr. Branham ISBN 0387972013

This monograph is concerned with overdetermined systems, inconsistent systems with more equations than unknowns, in scientific data reduction. It is not a text on statistics, numerical methods, or matrix cOmputations, although elements of all three, especially the latter, enter into the discussion. The reader I have in mind is a scientist or engineer who has gathered data that he or she wants to model by a mathematical system, perhaps linear, perhaps nonlinear, and solve to obtain the best estimates, in some sense of the term "best," of various parameters. Because the calculations will be performed on a digital computer, the first chapter discusses floating-point numbers and their effect on mathematical operations. The chapter ends with some methods for accurately summing floating-point numbers, an operation frequently required in numerical work and one often done by the worst possible method, recursive summation. Chapter 2 gives a brief review of linear algebra and includes vector and matrix norms and condition numbers of matrices and linear systems. ' Chapter 3 presents some ideas for manipulating sparse matrices. Frequently, time or memory can be saved by use of sparse matrix techniques. The subject is extensive and the chapter is only indicative of the many techniques available. Although Chapter 3 is somewhat extraneous to the rest of the book, Chapter 5, on linear least squares, makes use of the compressed storage mode for the symmetric matrices discussed in Chapter 3.

Scientific Data Analysis: An Introduction to Overdetermined Systems Review

This Scientific Data Analysis: An Introduction to Overdetermined Systems book is not really ordinary book, you have it then the world is in your hands. The benefit you get by reading this book is actually information inside this reserve incredible fresh, you will get information which is getting deeper an individual read a lot of information you will get. This kind of Scientific Data Analysis: An Introduction to Overdetermined Systems without we recognize teach the one who looking at it become critical in imagining and analyzing. Don't be worry Scientific Data Analysis: An Introduction to Overdetermined Systems can bring any time you are and not make your tote space or bookshelves' grow to be full because you can have it inside your lovely laptop even cell phone. This Scientific Data Analysis: An Introduction to Overdetermined Systems having great arrangement in word and layout, so you will not really feel uninterested in reading.