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**PRACTICAL LEAST SQUARES  
and Statistics for Surveyors**

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Monograph 13, Third Edition, March 2006, x + 332 pages,  
176 x 250 mm, paperback, ISBN 0-7334-2339-6

This book presents the information necessary to analyse surveying data by Least Squares concisely, with many worked examples, questions and answers, and at low cost to students. Many surveyors and students now use Least Squares (LS) to analyse their data and it is quite easy with modern computer software. Most of the material in this book specifically addresses the application of LS to adjustment of survey traverses and networks. The book covers the professional use of LS software as well as the details about how to do the calculations “inside the software”.

This new edition still tries to keep the notes as short as possible, to be concise and to include worked examples with full details. Changes since the last edition include the following. The first chapter, Least Squares Concepts, is shorter and clearer. There is a new chapter covering the detailed steps inside parametric method LS with simple worked examples and a network that combines total station and GPS observations. A new chapter on combined method LS includes engineering surveying examples as well as transformation problems. The old computer programming chapter has been removed and replaced with more appropriate material including the use of spreadsheets for LS calculations.

Copies of some of the data and spreadsheets used in the book and colour versions of some figures are available from the School of Surveying and Spatial Information Systems, UNSW, through an accompanying website. It is also planned to include updates or corrections to the book on the website.

This book is for students and practicing surveyors, not for LS experts. Second year undergraduate students at UNSW using this book have already passed subjects on matrix algebra, statistics, computer programming, and survey measurement techniques. Derivations of theory or equations are rarely included. Practical aspects are emphasised rather than theoretical correctness.