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Geographers and Earth Scientists**

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Introduction to Statistics
for
Geographers and Earth Scientists

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University of Sussex
Brighton

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Preface

This book aims to provide a comprehensive introduction to the subject of Statistics. It describes a wide range of elementary techniques, including those most commonly selected by research workers or taught in undergraduate courses at Universities and Polytechnics. The value of each technique is discussed, and attention is drawn to the pitfalls that must be avoided if the technique is to be correctly applied.

All the techniques are illustrated by carefully worked examples utilising real data. The examples are drawn from geography, planning and the earth sciences, but readers with backgrounds in other disciplines should not find them difficult to understand. All the calculations can be carried out using pencil and paper or using a simple pocket calculator, and only an elementary knowledge of mathematics is assumed.

The manuscript for this book has been used as a photostated text by geography students at the University of Sussex taking undergraduate statistics courses or engaged in postgraduate research. The manuscript has been revised and extended as a result of many useful suggestions from colleagues and students. I am particularly indebted to Dr. D.C. Funnell, Dr. T. Browne and Professor K.J. Tinkler for helping with sections of the text where their knowledge is more extensive than mine. I should also like to express my gratitude to Susan Rowland for undertaking the drawing of the diagrams. Needless to say I am responsible for any errors that remain either in the text or the diagrams, and I will be grateful to readers if they will draw them to my attention.

Sections of the text marked with an * may be skimmed over on first reading or omitted altogether if time is short. Although the theoretical background of each technique is explained before a worked example is given, some readers may prefer to study the example first and examine the theoretical background only when they have understood how the technique is applied.

More advanced topics in statistics, especially in regression and correlation, are examined in "Intermediate Statistics for Geographers and Earth Scientists", the companion volume to the present book. This volume contains a detailed discussion of the logic of significance testing, and examines the various ways in which statistical techniques have been used and misused in scientific research.

Computer program listings have not been included in the text because of space limitations, but it is hoped shortly to issue software cassettes with programs in BASIC that will run on the BBC Model B microcomputer.

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December 1983

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