

Preface

This book is a complementary of a former version published by Springer Verlag (Guex's 1991 "Biochronological Correlations"). Most of its material is new or presented in a more didactic and simpler way, especially the problems of reworking and diachronism of datums.

The readers who are acquainted with the basic graph theory and formal approaches have a detailed explanation of the new program UAGraph in Chaps. 2 and 3 of the book.

The new edition contains recent examples of applications of the Unitary Association Method (UAM) related to the analysis of post-extinction recovery around the Triassic Jurassic Boundary, evolutionary rates of the Lower Jurassic radiolarians and presents a new discussion of the Deboo's classical problem of correlation of the Paleogene in Mississippi and Alabama. The recent Constrained Optimization Method (Conop program) is discussed in detail and its results are compared with the RASC and UAM outputs.

As Fåhræus used to say: "In recent years many biostratigraphic zonations proposed in the literature either imply or directly state such a fine biostratigraphic resolution that in many cases has to be considered beyond the point of practical reproducibility, i.e. correlations attempted back onto such zonations carry with them little or no precision." It should be clear since the beginning of our book that the power of resolution of the UA method is contained in the data under the study and not in the method itself. Our theoretical model is unique in providing a full analysis of the internal complexity of biochronological problems, and in this manner, it differs from all other quantitative methods available today.

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