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Series of Scientific Monographies
“Mathematics and Fundamental Applications”

LECTURES
ON THE CLASSIFICATION OF
COMPLEX AND REAL LIE ALGEBRAS

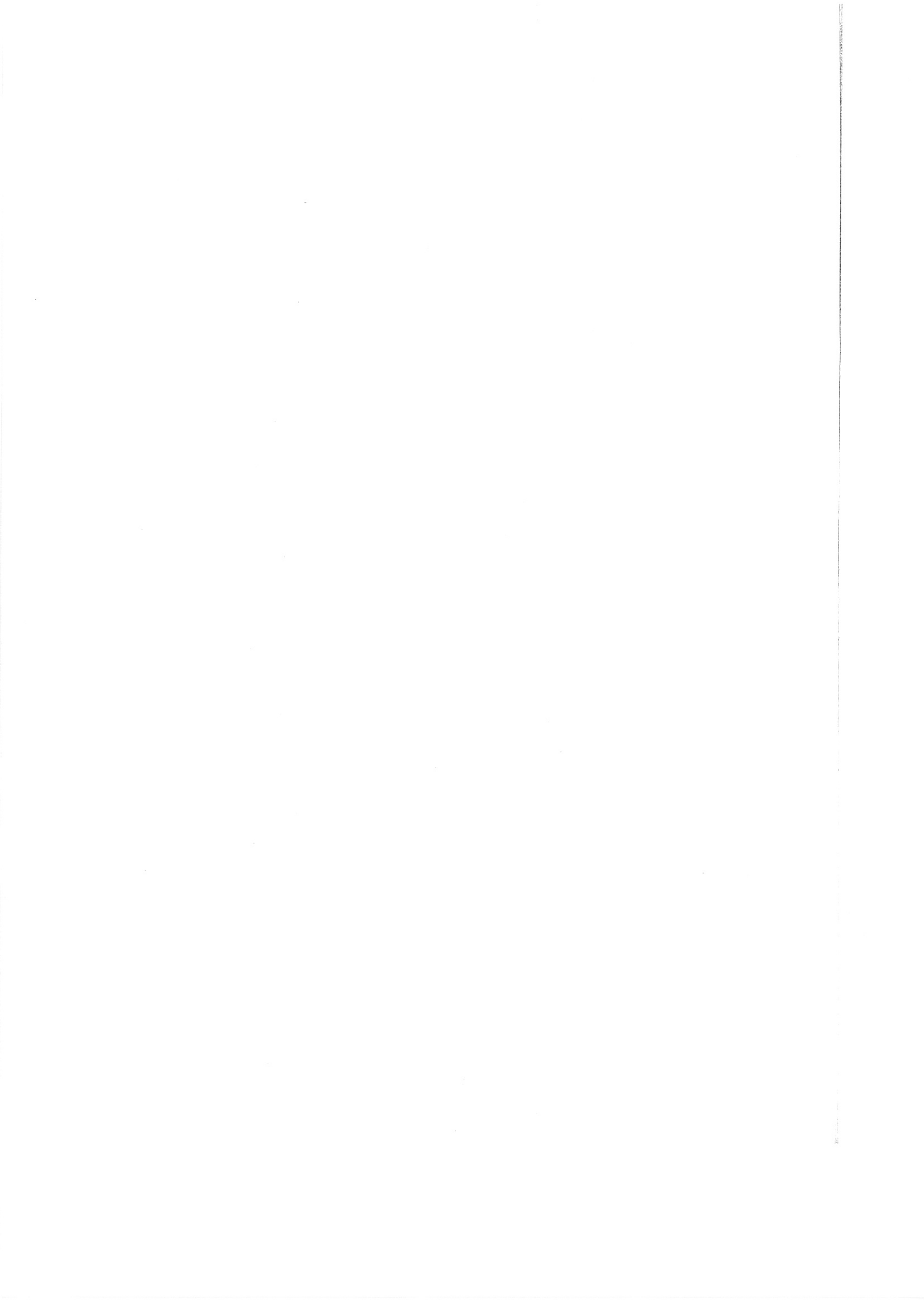
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University of Crete

*Lectures given in the framework of the
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*with the support of the
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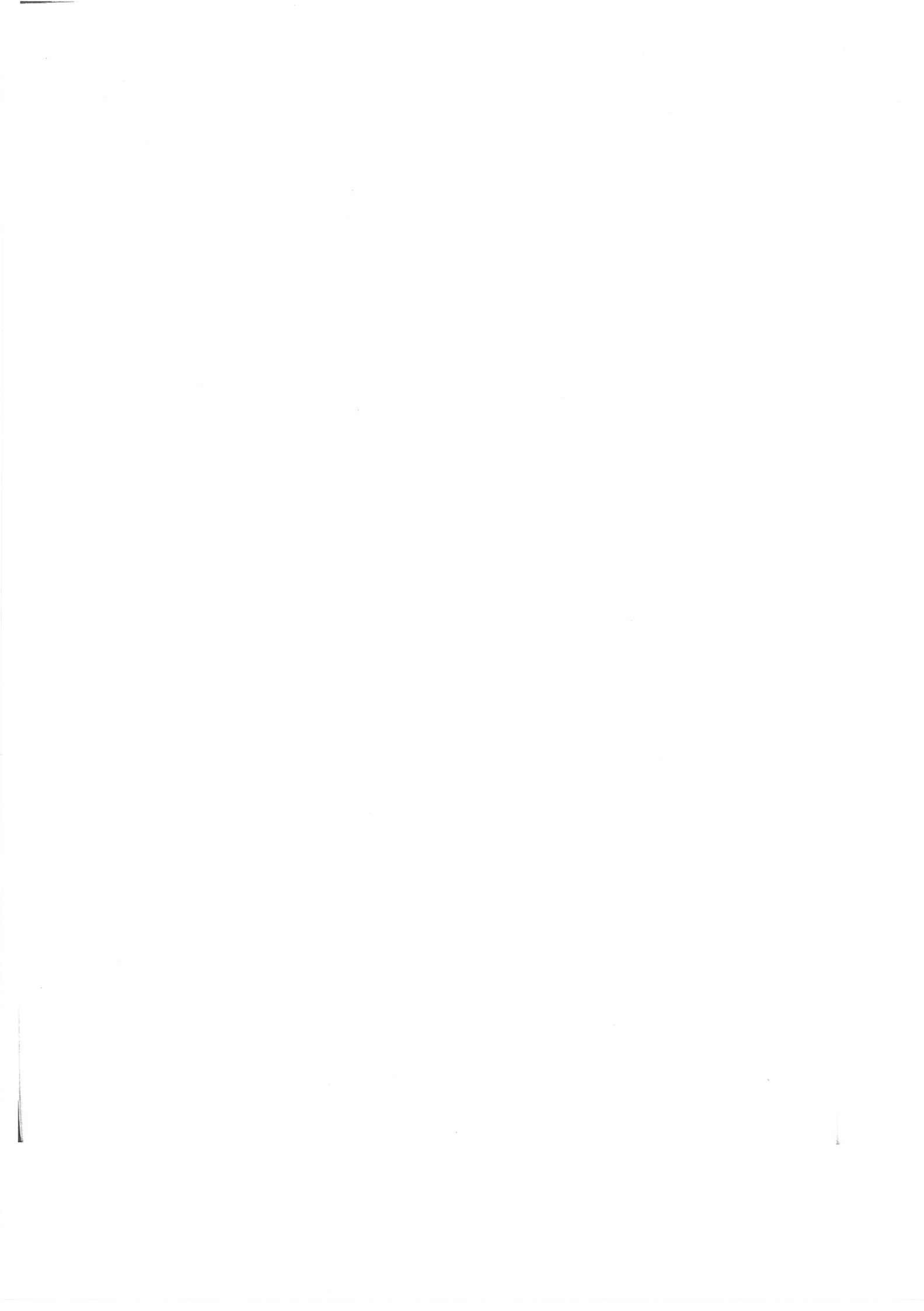
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Preparing the "Series of Scientific Monographs" has been one of the activities of the Erasmus Inter-university Cooperation Programme (ICP) "Mathematics and Fundamental Applications". The ICP is based on a network first established in 1987 when the coordinating institution was the Aristotle University of Thessaloniki. The monographs are written by Professors at the partner universities and consist of common teaching material for all ICP student participants. Their content corresponds generally to the needs of advanced undergraduate level or to those of early postgraduate studies. We are most grateful to all colleagues who freely gave up their time to prepare and then teach this coursework to the students. We are also indebted to the major contribution of the Foundation for Research and Technology of Crete, in allowing us to make use of its facilities for the production of this series.

*Spyros N. Pnevmatikos
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Lectures
on the
Classification
of
Complex
and
Real
Lie Algebras

Preface

The following notes grew out from a seminar on the classification of real Lie algebras, held at the University of Crete in the WS 1988/89. This seminar was considered as a continuation to the excellent lectures on Lie groups and Lie algebras, given by my friend Hans Samelson, one semester before. The notes were prepared by a non-expert in the field (that's me), to serve as a help, for those which wanted to learn quickly, how the simple real Lie algebras are classified. This, of course, is not an excuse for the errors they contain *, but a warning to the innocent reader.

The reader, which, among other things, has to be patient with the different verses and motifs from poets and philosophers figuring everywhere in the text. Incidentally, 1988 was the 200-th anniversary of Byron's birth, so it was reasonable to honor this great poet (and some others as well) and remember his immortal verses not less than the details of the structure of the Lie algebras.

The list on the next page indicates, I hope, the contents and the way we get to our aim.

Paris Pamfilos, Paleochora, Crete, the 23 February 1991

* I would be very grateful to those readers (if any) which would point out to me errors and suggestions, to make the text better. They can contact me, writing to: University of Crete, Department of Mathematics, Iraklion-Crete-Greece, P.O. Box 1470. (or call 0030-81-246428)

