Journal of Lie Theory
Volume **6** (1996) 215–247

On some causal and conformal groups

Wolfgang Bertram

Communicated by J. Hilgert

Abstract. We determine the causal transformations of a class of *causal symmetric spaces* (Th. 2.4.1). As a basic tool we use *causal imbeddings* of these spaces as open orbits in the conformal compactification of Euclidean Jordan algebras. In the first chapter we give elementary constructions of such imbeddings for the classical matrix-algebras. In the second chapter we generalize these constructions for arbitrary semi-simple Jordan algebras: we introduce *Makarevič spaces* which are open symmetric orbits in the conformal compactification of a semi-simple Jordan algebra. We describe examples and some general properties of these spaces which are the starting point of an algebraic and geometric theory we are going to develop in subsequent work [Be96b].

Technische Universität Clausthal
Institut für Mathematik
Erzstraße 1
D - 38678 Clausthal-Zellerfeld

Received June 6, 1996
and in final form August 9, 1996

ISSN 0949–5932 / $2.50