

## An introduction to the spinorial chessboard

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*Abstract. The article contains a brief review of the first stage of the authors' research on spinors associated with higher-dimensional geometries and, in particular, on the physical relevance of Cartan's simple (pure) spinors. Historical remarks are followed by a short description of the relation between spinors and null elements. General properties (grading, bilinear forms, charge conjugation) of Clifford algebras associated with real vector spaces with scalar products are described and their double periodicity modulo 8 is exhibited. The latter gives rise to a chessboard arrangement of the algebras; it is shown how the relevant properties of the spin representation of every real Clifford algebra can be simply obtained from those of the representation of an algebra belonging to the chessboard.*

### 1. INTRODUCTION

Spinors – and structures associated with them – are among the geometrical notions whose importance was recognized as a result of research in physics. For a long time, the interest of physicists in spinors was restricted to three- and four-dimensional spaces (Euclidean and Minkowski). Spinors associated with them have two or four components. Recent work on fundamental interactions and their unification makes essential use of geometries of more than four dimensions. For this reason, spinor structures in higher dimensions and, in particular, Elie Cartan's «simple» or «pure» spinors, have now more chance of

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