

## ON SOME LIE GROUPS CONTAINING SPIN GROUPS IN CLIFFORD ALGEBRA

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We consider 15 different Lie groups in Clifford algebra of arbitrary dimension and signature and prove isomorphisms between these groups and classical matrix Lie groups - symplectic, orthogonal, unitary and linear groups. Also we obtain isomorphisms of corresponding Lie algebras. Information about pseudo-unitary group  $Wcl(p, q)$  you can find in [1], [2] and [3]. Several Lie groups are discussed in [4].

Spin group is a subgroup of all considered Lie groups. One of considered Lie groups coincides with group  $Spin_+(p, q)$  in the cases of dimensions  $n \leq 5$ .

We use the notion of the quaternion type [5], [6] in our considerations. New classification based on the notion of the quaternion type helps us to analyse [7] commutators of Clifford algebra elements.

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