

Year: 2012	Vol.: 80	Fasc.: 1-2
------------	----------	------------

Title: Examples of indefinite globally framed f -structures on compact Lie groups

Author(s): Letizia Brunetti and Anna Maria Pastore

We extend to the semi-Riemannian context the well-known results obtained by Blair, Ludden and Yano on toroidal principal bundles endowed with a metric globally framed f -structure. In this way we obtain examples of compact indefinite $\mathcal{S}$ -manifolds. Then, we define an indefinite $\mathcal{S}$ -structure on the Lie group $U(2)$ with a Lorentz left-invariant metric and, applying our results, we construct commutative diagrams involving semi-Riemannian submersions and Hopf fibrations. We also prove that $U(2)$ with such a structure is foliated by Reinhart lightlike hypersurfaces. Finally, we consider a normal indefinite globally framed f -structure on the Lie group $U(4)$ proving that it projects on $U(4)/U(3)$ in a Sasakian structure isomorphic to the standard Sasakian structure of $\mathbb{S}^7$.

Address:

Letizia Brunetti
Department of Mathematics
University of Bari
via E. Orabona 4
I-70125 Bari
Italy

Address:

Anna Maria Pastore
Department of Mathematics
University of Bari
via E. Orabona 4
I-70125 Bari
Italy