Physics AUC, vol. 21-Sp.Issue, 133-140 (2011)

Hidden Symmetries in a Gauge Covariant Approach

Mihai Visinescu
Department of Theoretical Physics
National Institute for Physics and Nuclear Engineering
P.O.Box M.G.-6, Magurele, Bucharest, Romania
mvisin@theory.nipne.ro

Abstract

Higher order symmetries in a covariant Hamiltonian framework are investigated. Some nontrivial examples on a three-dimensional space involving Killing tensors of rank 2 are presented. We analyze the possibility for a higher order symmetry to survive when the electromagnetic interactions are taken into account. A concrete realization of this possibility is given by the Killing-Maxwell system.