A geometric construction of abelian Lie group extensions

Cornelia Vizman
West University of Timisoara, Department of Mathematics
Bd. V.Parvan 4, 1900-Timisoara, Romania
e-mail: vizman@math.uvt.ro

Abstract

We extend Kostant's central extension of a group of diffeomorphisms preserving a vector valued closed 2-form ω (the kernel of a flux homomorphism), to an abelian extension of a group of diffeomorphisms preserving ω up to a linear isomorphism (the kernel of a flux 1-cocycle). We use this abelian extension to build abelian Lie group extensions.