Scientific report on the development of the project in

October 2011- October 2013

Abstract: In the past two years we published 15 papers in ISI journals and 1 paper in a Proceeding of an international conference (Contemporary Math. AMS, Vol. 585, 2013). Other 8 papers were submitted for publication by the members of the research team.

Papers published/accepted for publication:

The stage 2012:


See the 2011 report for a short abstract.


See the 2012 report for a short abstract.


See the 2011 report for a short abstract.


See the 2011 report for a short abstract.


See the 2012 report for a short abstract.


See the 2012 report for a short abstract.

The stage 2013:


See the 2012 report for a short abstract.


This paper was written in the 2013 stage as part of the first objective, Problem 1a), of our grant proposal. The extending structures problem is formulated in the context of Leibniz algebras. We provide an answer to this problem by constructing two nonabelian coomological objects.


This paper was elaborated and published during the 2013 stage as part of the first objective, Problems 1a), 1b) and 1d), of our grant proposal. We formulate the classifying complements problem for an extension of Hopf/Lie algebras. The answer to this problem requires the introduction of a non-commutative descent type theory for bicrossed products.


This paper was written in the 2013 stage as part of the first objective, Problem 1a), of our grant proposal. The extending structures problem is formulated in the context of Lie algebras. As in the case of Leibniz algebras, we provide an answer to this problem by constructing two nonabelian coomological objects.


See the 2012 report for a short abstract.


See the 2012 report for a short abstract.


See the 2011 report for a short abstract.
This paper is part of the second objective, Problems 2d) and 2e), of our grant proposal. The main result provides a description for the commutator of a normal subcategory of the fusion category of representations of a semisimple Hopf algebra.


See the 2012 report for a short abstract.

**Papers submitted for publication:**

[T1] S. Burciu – On coideal subalgebras of cocentral Kac algebras and a generalization of Wall’s conjecture.


[T3] A. L. Agore, G. Militaru – Classifying complements for groups. Applications,


15.10.2013

Project director,

Prof. dr. Gigel Militaru