

Scientific objectives of the project PN-II-RU-PD-2012-3-0656

IDENTIFICATION DATA

Project PN-II-RU-PD-2012-3-0656

Contract nr. 7 / 24.04.2013

Title: Combinatorial and homological methods in the study of algebras

Web page: <https://dl.dropboxusercontent.com/u/112281424/grantPD-2012-3-0656/index.html>

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Financing agency: UEFISCDI

Host institution: Institutul de Matematică "Simion Stoilow" al Academiei Române (IMAR), București

Duration of the project (updated February 2014): May 2013 – October 2015

These are the main scientific objectives of this project and the results we obtained:

- (1) For the reporting year: 2014
 - (a) *Asyptotic properties of toric algebras.*
Expected result: 1 paper published in an ISI journal
Status: OK: J. Herzog, D.I. Stamate, *On the defining equations of the tangent cone of a numerical semigroup ring*, J. Algebra **418** (2014), 8–28.
 - (b) *persistence to Groebner deformations of homological properties of some classes of algebras*
Expected result: 1 preprint.
Status: OK: M. Cimpoeaş, D.I. Stamate, *On intersections of complete intersection ideals*, preprint 2014.
- (2) For the reporting year: 2015
 - (a) *persistence to Groebner deformations of homological properties of some classes of algebras*
Expected result: 1 submitted paper.
Status: OK:
 - (i) M. Cimpoeaş, D.I. Stamate, *On intersections of complete intersection ideals*, preprint, submitted to an ISI journal 2015.
 - (ii) Alexandra Seceleanu, Dumitru I. Stamate, *On Sally semigroup rings*, in preparation.
 - (b) *combinatorial and topological study of the intervals in a numerical semi-group*
Expected result: 1 submitted paper.
Status: OK: J. Herzog, D.I. Stamate, *Quadratic numerical semigroups and the Koszul property*, 23 pages. Preprint version available at arXiv:1510.00935 [math.AC]. Submitted to an ISI journal 2015.
 - (c) *the Koszul property for some classes of algebras*
Expected result: 1 preprint.

Status: OK: D.I. Stamate, *On the Cohen-Macaulay property for quadratic tangent cones*, preprint 2015.

30 October 2015
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