Final report: Project Croissance

Several serious advances has been done on the scientific subjects indicated in the work plan during reporting period. Majority of the project objectives have been achieved.

In particular advances have been made in

- Study of competitive models of Laplacian growth, which resulted in publication in Journal of Statistical Physics: November 2011, Volume 145, Issue 4, pp 919-931

- Work on new applications of algebraically integrable systems in fluid dynamics, which resulted in publication in Analysis and Mathematical Physics: September 2013, Volume 3, Issue 3, pp 277-294

- Work on Schramm-Loewner and Levy-Loewner evolution: Two articles have been published in 1) Journal of Physics A: Mathematical and Theoretical Volume 45 Number 27, 275001, 2)Journal of Statistical Mechanics: Theory and Experiment, Volume 2013, April 2013, P04007

- The habilitation thesis entitled "Integrable systems in theory of moving fronts", which completely corresponds to the project objectives , has been successfully defended during the first year at the Fellow host institution (http://people.math.jussieu.fr/ aboutet/hdr/).

There has been no deviation from the project work plan.

Articles published in refereed journals during the reporting period

1. Article title: On a Competitive Model of Laplacian Growth

   Authors: Igor Loutsenko, Oksana Yermolayeva, Michel Zinsmeister

   Journal: Journal of Statistical Physics

   Volume: 145

   Issue: 4

   Date: 1 November 2011

   Pages: 919 - 931

   DOI: 10.1007/s10955-011-0278-8

2. Article title: SLE_κ: Correlation Functions in the Coefficient Problem

   Authors: Igor Loutsenko

   Journal: Journal of Physics A: Mathematical and Theoretical

   Volume: 45

   Issue: 27

   Date: 13 July 2012

   Pages: 275001

   DOI: doi:10.1088/1751-8113/45/27/275001

3. Article title: Average Harmonic Spectrum of the Whole-Plane SLE

   Authors: Igor Loutsenko, Oksana Yermolayeva

   Journal: Journal of Statistical Mechanics: Theory and Experiment

   Volume: 2013

4. Article title: New Applications of Algebraically Integrable Systems in Fluid Dynamics
   Authors: Anne Bouter de Monvel, Igor Loutsenko, Oksana Yermolayeva
   Journal: Analysis and Mathematical Physics
   Volume: 3
   Issue: 3
   Date: 1 September 2013 (Published online: 26 May 2013)
   Pages: 277-294
   DOI: 10.1007/s13324-013-0058-5

Invited Conference Talks

- Talk Title: Elliptic Growth: Solitons and Algebraic Integrability
  Authors: Igor Loutsenko
  Conference: Integrable Systems & Random Matrices
  Place: Institut Henri Poincare, Paris, France
  Dates: 21-23 May 2012
  Web page: `http://www.math.jussieu.fr/~aboutet/congres/its/`

Seminars

1. Title: New Applications of Algebraically Integrable Systems in Fluid Mechanics
   Authors: Igor Loutsenko
   Seminar: Physique Mathématique et Géométrie
   Place: Institut de Mathematiques de Jussieu, Paris, France
   Dates: 5 April 2011
   Web page: `http://www.math.jussieu.fr/~aboutet/pmg/pmg-10-11/index.html`

2. Title: Analytic Approaches in Interface Dynamics
   Authors: Igor Loutsenko
   Seminar: Analyse, Géométrie et Algébre
   Place: Laboratoire de Mathématiques et Applications de Metz, Universite-Metz, France
   Dates: 20 May 2011
   Web-page: `http://www.mmas.univ-metz.fr/~aga/20110520-LOUT.html`