Curriculum Vitæ

July 2006

Personal details
Name: Zoltán Nagy
Date of birth: June 9th, 1978
Place of birth: Szeged, Hungary
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Currently at:
Universidade do Algarve - FCT - Dep. Matemática
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Education

2002–2005 **PhD** in Physics at the University of Cergy-Pontoise, France.

Title: *Integrable systems and dynamical reflection algebras*

Supervisors: Jean Avan and Geneviève Rollet. Defended on October 25th, 2005.

2001–2002 **DEA** in theoretical physics (∼first year of Ph.D. studies). Delivered jointly by Ecole polytechnique, Ecole Normale Supérieure and Universities of Paris 6,7 and 11.

1999–2001 Ingénieur de l'Ecole polytechnique.(∼Master of Science) Specialization in theoretical physics. Palaiseau, France

1996–1999 Undergraduate studies in physics at the University of Szeged, Hungary.

Teaching

2002-2005 First year undergraduate class in Classical Mechanics at the University of Cergy-Pontoise

Relevant Experience

Jan 2006- Postdoc at the Department of Mathematics of the University of Algarve (Faro, Portugal). Research project with Nenad Manojlović.

2001 Master degree project (3 months)

Between highway traffic and interface growth: study of the dynamics by DMRG

Tutors: Cécile Appert and Ludger Santen, Statistical Physics Laboratory, ENS, Paris

1999 Summer project (1 month) *Lax pairs of the Calogero-Moser model*

Tutor: László Fehér, Department of Physics, University of Szeged, Hungary

Computer skills

Programming in C++ and Java; working experience in Mathematica.

Languages Hungarian: mother tongue; French, English : fluent; Russian, German, Portuguese: basic

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Publication List

Z. Nagy, J. Avan: *Spin chains from dynamical quadratic algebras*, J. Stat. Mech. (2005) P03005, `math.QA/0501029`

Z. Nagy, J. Avan, A. Doikou and G. Rollet: *Commuting quantum traces for quadratic algebras*, J. Math. Phys. **46**, 083516 (2005); `math.QA/0403246`

Z. Nagy, J. Avan and G. Rollet: *Construction of dynamical quadratic algebras*, Lett. Math. Phys. **67** (2004) p. 1-11; `math.QA/0307026`

Z. Nagy, C. Appert and L. Santen: *Relaxation times in the ASEP model using a DMRG method*, J. Stat. Phys. **109** (2002) p. 623; `cond-mat/0204081`

Conferences and Schools

Recent Advances in the Theory of Quantum Integrable Systems, organized by the Laboratory of Theoretical Physics of Annecy, March 2003, Annecy, France

"International Workshop on Integrable Models and Applications: Second annual meeting of the EU Network EUCLID", September 2004, Sozopol, Bulgaria

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Communications

"Dynamical quadratic algebras", short talk at the "International Workshop on Integrable Models and Applications: Second annual meeting of the EU Network EUCLID", Sozopol, Bulgaria, September 1st, 2004

Talks given about "Dynamical quadratic algebras" at the ENS Lyon, LAPTH Annecy, Mathematics Department of Durham, York and Leeds in January and February 2005

Talk given about "Commuting traces for dynamical quadratic algebras" at the KFKI Research Institute for Particule and Nuclear Physics, Budapest in May 2004

"Dynamical quadratic algebras", Poster at Recent Advances in the Theory of Quantum Integrable Systems September 2005, Annecy

"Algebraic Bethe ansatz for the B_1 dynamical (elliptic) quantum group" talk given at the 7th Workshop on CFT and integrable systems, Bologna, July 8, 2006

Thesis

Recent developments in the theory of quantum and classical integrable systems have shown the interest of models endowed with a dynamical R-matrix. Quantum dynamical R-matrices depend not only on the familiar spectral parameter, but also on a set of variables which in the classical limit can be identified with position variables of an interacting many particle system. My work during this thesis concentrated on finding consistent dynamical extensions of nondynamical quadratic (or reflection) algebras. Once these extensions were properly defined, we addressed the questions of building a hierarchy of commuting Hamiltonians out of the defining elements of the dynamical quadratic algebras. Finally, we showed that new types of spin chains can also be constructed using these dynamical quadratic algebras.

Contact

Jean Avan, LPTM Université de Cergy-Pontoise; 2 avenue Adolphe Chauvin, Pontoise, 95302 Cergy-Pontoise cedex, France; Email: avan@ptm.u-cergy.fr

László Fehér, KFKI Research Institute for Particule and Nuclear Physics, Hungarian Academy of Sciences; Konkoly Thege Miklós út 29-33, H-1121 Budapest, Hungary; Email: lfeher@rmki.kfki.hu

Cécile Appert, LPS Ecole Normale Supérieure, 24 rue Lhomond, 75005 Paris, France; Email: appert@lps.ens.fr