

## Curriculum vitae

Surname, first name: Dvořáková (born Balková), L'ubomíra

Date of birth:

Nationality:

## Education

- May 2008 defence of the doctoral thesis (with honours)  
obtained degree: Ph.D. (doktor in Czech, docteur in French)
- 2005 – 2008 joint thesis between Czech Technical University (CTU) in Prague  
(specialization: Applied Mathematics)  
and University Paris Diderot – Paris 7  
(specialization: Theoretical Physics)
- February 2005 final state exam and defence of the diploma thesis  
obtained degree: Engineer (~ Master of Science) in Mathematical Engineering  
(excellent grade with honours)
- 1999 – 2005 Faculty of Nuclear Sciences and Physical Engineering (FNSPE), CTU in Prague  
(specialization: Applied Mathematics)

## Honours and Scholarships

- May 2013 Laureate of L'Oréal UNESCO Award for Women in Science
- December 2009 CTU Rector Prize of the 1st grade for excellent doctoral theses
- December 2009 Honourable Mention within Votruba Prize for the best doctoral thesis in Theoretical Physics
- 2005 Scholarship of the French government for Ph.D. students "en co-tutelle" (under double supervision)
- November 2004 Foundation Preciosa scholarship of excellence for students of CTU in Prague
- June 2004 McKinsey&Company scholarship for students of technical universities

## Research Topics

- 2011 – 2014 • applications of combinatorics on words in cryptology:  
random number generators, dithered hash functions  
(collaboration with M. Bucci, A. De Luca, J. Hladký, S. Puzynina)
- 2008 – 2014 • theoretical informatics:  
beta-integers, non-standard numeration systems, combinatorics on words  
(collaboration with Z. Masáková, E. Pelantová, Š. Starosta, O. Turek)
- 2005 – 2008 • mathematical models of quasicrystals, mainly beta-integers,  
combinatorial and arithmetical properties of beta-integers  
(collaboration with Z. Masáková)  
physics of beta-integers (diffraction, Schrödinger operator)  
(collaboration with J.-P. Gazeau)
- results summarized in the doctoral thesis: *Beta-integers and quasicrystals*
- 2001 – 2005 • geometrical properties of mathematical models of quasicrystals,  
in particular the Meyer property of cut-and-project sets
- results summarized in the diploma thesis: *Minimal covering of the difference set*

## Professional Experience at the Department of Mathematics, FNSPE, CTU in Prague

- **Assistant professor** since 2008
- **Teaching** since 2002:  
lectures in Linear Algebra, Cryptology, History of Mathematics  
tutorials in Linear Algebra and Calculus
- **Supervision of student projects**
  - 2013 – 2014 bachelor project: *Random number generators and combinatorics on words* (Jakub Hlavnička)
  - 2013 – 2014 bachelor project: *Palindromic closures and palindromes in infinite words* (Josef Florian)
  - 2012 – 2013 bachelor project: *Hash functions and combinatorics on words* (Jan Legerský)
  - 2011 – 2013 bachelor project: *Aperiodic pseudorandom number generators* (Jiří Fiala)
  - 2010 – 2011 bachelor project: *Beta-power series* (Sirui Cheng)

## Research Stays

- April – May 2014 University of Oulu, Finland (invited by J. Kortelainen)
- December 2011 University Paris 7-Denis Diderot, Paris, France (invited by J.-P. Gazeau)
- July 2011 Joint Institute for Nuclear Research, Dubna, Russia
- September 2010 Faculty of Informatics, Debrecen, Hungary (invited by A. Pethö)

## Participation in Conferences

- 2006 – 2014 lectures at more than 15 international conferences
- September 2012 invited lecture at Česko-slovenská MELA (Meeting on Languages) in Telč
- May 2012 invited lecture at AM2012 (Applications of Mathematics) in Prague

## Organization of Conferences

- 2011 international conference Words 2011
- 2007 – 2013 student conference Combinatorics on Words
- 2006 – 2013 Ph.D. student conference Doctoral Days

## Grant Investigation

- 2013 – 2017 member of the research team of the Czech Science Foundation grant GAČR
- 2009 – 2012 member of the research team of the Czech Science Foundation grant GAČR
- 2010 – 2014 principal investigator of the grant of the Student Grant Agency of CTU in Prague for organization of student conferences SVK
- 2009 principal investigator of the Internal Grant IGS of CTU in Prague
- 2012 – 2014 guarantor of the Erasmus agreement CTU in Prague – University Paris 7, France
- 2013 – 2014 guarantor of the Erasmus agreement CTU in Prague – University of Oulu, Finland

## Membership

- since 2014 Executive Committee of Czech Mathematical Society
- since 2014 Organizing Committee of Mathematical Olympiad in Prague
- since 2011 Union of Czech Mathematicians and Physicists
- 2012 – 2014 Academic Senate of FNSPE CTU in Prague

## Popularization of Mathematics

- lectures for high school students and teachers
- public lectures
- popularization papers
- involved in student scientific projects (SOČ and Amavet) as supervisor and jury member
- main administrator of the web for high school students jaderka.cz

## Languages

- English fluent
- French fluent, certificate DALF C1
- German theoretical knowledge
- Slovak fluent
- Czech mother tongue