

Curriculum Vitae of Prof. Dr. Mama Foupouagnigni

Personal information

Birth date: 05 / 03 / 1968

Birth place: Foumban, Cameroon

Permanent Residence: Yaounde,
Cameroon



Marital status: Married to Mrs Adjara S. Nchiassu Mimcha on May 19, 1996. She has a Master Degree in Art and is English Higher School Teacher and Discipline Master at the General Higher School Limbe (GHS).

Our children: Samihra (1997), Khadidja (1999), Fadihla (2000), Mouhammad Nassair (2002) and Mahmoud Jamal (2011).

Contacts

Prof. Dr. Mama Foupouagnigni
Centre President, African Institute for Mathematical Sciences
Professor of Mathematics, University of Yaounde I
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Email: mfoupouagnigni@aims-cameroon.org

Language skills: French (Excellent, read/write/speak), English (Very Good, read/write/speak), German (fair good).

Integration into public service: November 01, 1994 as Higher School Teacher of Mathematics

Matriculation number at the public service: 55 28 25 I

Recruitment at the University: March 23, 2000

Date of Retirement from Public Service: Mars 05, 2033 (at age of 65 years)

Fields of Research and expertise

- Orthogonal Polynomials,
- Special Functions of Mathematics Physics,
- Approximation Theory, Mathematics Education,
- Computer Algebra,
- Computational Mathematics;
- Mathematics Education
- Use of ICT in Education & eLearning

Education

- 2006 Habilitation (30/06), Department of Mathematics and Computer Science, University of Kassel, Germany;
- 1998 PhD Mathematics (12/98), Institut de Mathématiques et de Sciences Physiques, Porto- Novo, République du Bénin.
- 1995 DEA in Mathematical Physics (This correspond to the end of the first year of doctoral courses), Institut de Mathématiques et de Sciences Physiques, Porto- Novo, République du Bénin;
- 1994 DIPES II , Diploma of the Advanced Teachers' Training College, second cycle, Yaounde;
- 1993 Master Degree in Mathematics, University of Yaounde I, Yaounde Cameroon;
- 1992 DIPES I , Diploma of the Advanced Teachers' Training College, first cycle, Yaounde;
- 1992 Bachelor degree in Mathematics, University of Yaounde I, Yaounde Cameroon;
- 1988 Baccalauréat, Serie C (General Certificate of Education, Advanced Level);
- 1980-1988 Secondary and Higher School: Lycée Sultant Ibrahim Njoya, Foumban;
- 1980 Certificat d'Etudes Primaires et Élémentaires
- 1974 - 1980 Primary school: Ecole Publique de Njintout, Foumban, Cameroon;

International Academic Positions

- 08/2016– present: Centre President, African Institute for Mathematical Sciences, AIMS-Cameroon (First Centre President since creation of AIMS Cameroon in July 2013);
- 08/2013– 08/2016: Academic Director, African Institute for Mathematical Sciences, AIMS-Cameroon (I am the Founding Academic Director who started from scratch the Academic activities of AIMS Cameroon);

- Academic appointments:

- May 2013 – present: Professor, Department of Mathematics, Advanced Teachers' Training College, Yaounde, Cameroon (on secondment at AIMS Cameroon since September 2013 with salary paid by AIMS only);
- 11/2006 – 05/2013: Associate Professor, Department of Mathematics, Advanced Teachers' Training College, Yaounde, Cameroon
- 06/ 2001 – 10/2006: Senior Lecturer, Department of Mathematics, Advanced Teachers' Training College, Yaounde, Cameroon
- 03 / 2000 - 05/ 2001: Lecturer, Department of Mathematics, Advanced Teachers' Training College, Yaounde, Cameroon;
- 01 / 99 - 02/ 2000: Part time Lecturer, Department of Mathematics, Advanced Teachers' Training College, Yaounde, Cameroon

Administrative positions:

- November 2007 → 09/2013: Head of the National and Interafrican Cooperation Service at the University of Yaounde I;
- October 2009 → 09/2013: Rapporteur (Deputy Coordinator) of the Focal Team in charge of making functional the National and Sub-regional Virtual Universities project hosted by the University of Yaounde I;

Some Membership of Scientific organisations

- Member of the Society of Industrial and Applied Mathematics (SIAM): <http://www.siam.org/>
- Member of the International Research Group: Orthogonal Polynomials, Special Functions and Application (OPSFA): <http://wis.kuleuven.be/events/OPSFA/>;
- Member of the International Society of Difference Equations and Applications: <http://www.isded.com/>;

Some Scientific Journal for which I am Reviewer & Expert

- Journal of Computational and Applied Mathematics;
- International Journal of Mathematics and Mathematical Sciences;
- Bulletin of the Belgian Mathematical Society;
- Complex variables and Elliptic equations;
- Applied Numerical mathematics;
- Journal of Mathematical Analysis and Applications.

Other Positions

- Africa Representative at the Commission of Developing Countries of the International mathematical Union for the period 20015-2018: (<http://www.mathunion.org/cdc/about-cdc/members-cdc/>);
- Alexander von Humboldt Ambassador Scientist for Cameroon (2008→December 2013)
- President of the Humboldt Association Cameroon (2008→present);
- Member of the National Committee in charge of promotion of lecturers of state universities (2005→ 2014);
- Member of the scientific council of the Higher Teachers' Training College (2008→ present);
- Member of the national committee in charge of the implementation of the BND reform;
- Rapporteur of the Focal Team in charge of making functional the virtual Universities (Equivalent to the position of Deputy Coordinator of the Virtual University) 2010-2013.

Fellowships and awards

- Humboldt Alumni Innovative Network Initiative award (25.000 Euros), 2012, by the Humboldt Foundation
- Alexander von Humboldt Research Fellow 09/2001 - 11/2002
- ICTP (Trieste, Italy) Junior Associate 2001 - 2006
- Consulting Fellow of the World Innovative Foundation 2001 - present

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- Computer Algebra,
- Computational Mathematics;
- Mathematics Education
- Use of ICT in Education & eLearning

Publications

(NB: All publications listed below are recognised by the American Mathematical Society mathscinet information system. For more information please search my name at: <http://www.ams.org/mathscinet/>)

- 1- M. Foupouagnigni, M. N.Hounkonnou and A. Ronveaux: Laguerre-Freud equations for the recurrence coefficients of Dw semi-classical orthogonal polynomials of class 1, J. Comput. Appl. Math. 99 (1998), 143-154.
- 2- M. Foupouagnigni, W. Koepf and A. Ronveaux: The fourth-order difference equation satisfied by the associated classical discrete orthogonal polynomials, J. Comput. Appl. Math. 92 (1998), 103-108.
- 3 - M. Foupouagnigni, A. Ronveaux and W. Koepf : The fourth-order q-difference equation satisfied by the first associated q-classical orthogonal polynomials, J. Comput. Appl. Math.101 (1999), 231-236.

- 4 - M. Foupouagnigni, M. N. Hounkonnou and A. Ronveaux (1999): Fourth-order difference equation satisfied by the associated orthogonal polynomials of the D-Laguerre-Hahn class, *J. of Symb. Comput.* 28, 06 (1999) 801-818.
- 5 - M. Foupouagnigni, A. Ronveaux and M. N. Hounkonnou : Fourth-order difference equation satisfied by the associated orthogonal polynomials of the Dq-Laguerre-Hahn class, *J. Diff. Eqn. Appl.* 7/3 (2001), 445-472.
- 6- M. Foupouagnigni, and A. Ronveaux : Fourth-order difference equation satisfied by the co-recursive q-classical orthogonal polynomials. *J. Comput. Appl. Math* 133/1-2 (2001), 355-365.
- 7 - M. Foupouagnigni and F. Marcellán : Characterization of the Dw - Laguerre-Hahn Functionals. *J. Diff. Eqn. Appl.* 8 (2002), 689-717.
- 8- M. Foupouagnigni and A. Ronveaux: Difference Equations for the Co-recursive rth Associated Orthogonal Polynomials of the D_q Laguerre-Hahn Class, *J. Comput. Appl. Math.* 153 (2003), 213-223 .
- 9 - M. Foupouagnigni, W. Koepf and A. Ronveaux: On fourth-order difference equations for orthogonal polynomials of a discrete variable: Derivation, factorization and solutions *J. Diff. Eqn. Appl.* 9 (2003), 777-804.
- 10 - W. Van Assche, M. Foupouagnigni: Analysis of non-linear recurrence relations for the recurrence coefficients of generalized Charlier polynomials, *J. nonlinear Math. Phys.* 10 (2) (2003), 231-237.
- 11- M. Foupouagnigni, W. Koepf and A. Ronveaux: On solutions of fourth-order differential equations satisfied by some classes of orthogonal polynomials, *J. Comput. Appl. Math.* 162 (2004), 299-326.
- 12- M. Foupouagnigni, W. Koepf and A. Ronveaux: On factorization and solutions of q-difference equations satisfied by some classes of orthogonal polynomials, *J. Diff. Eqn. Appl.* 10(8) (2004), 729-747.
- 13- M. Foupouagnigni, on difference equations for orthogonal polynomials on nonuniform lattices, *J. Diff. Eqn. Appl.* 14(2) (2008), 127-174.
- 14- G. Bangerezako, M. Foupouagnigni: Laguerre-Freud equations for the recurrence coefficients of the Laguerre-Hahn orthogonal polynomials on special nonuniform lattices, *Syllabus Review* 2(2) (2011):1-25 (Journal of the Higher Teachers' Training College of the University of Yaounde I)
- 15- M. Foupouagnigni, M. Kenfack Nangho, S. Mboutngam
Characterization theorem for classical orthogonal polynomials on non-uniform lattices: the functional approach, *Integral Transforms and Special Functions*, Vol. 22, Iss. 10, 2011 ;
- 16 - M. Foupouagnigni, W. Koepf, D.D. Tcheutia, P. Njionou Sadjang, Representations of q-orthogonal polynomials. *Journal of Symbolic Computations*, Volume 47 Issue 11, November, 2012 ,Pages 1347-1371;
- 17- M. Foupouagnigni, W. Koepf, D. D. Tcheutia, Connection and Linearization Coefficients of the Askey-Wilson Polynomials, *Journal of Symbolic Computation*, vol 53, (2013), 96-118.
- 18- M. Foupouagnigni, W. Koepf, M. Kenfack Nangho and S. Mboutngam: On Solutions of Holonomic Divided-Difference Equations on non-uniform Lattices, *Axioms*, vol 3 (2013), 404-434.
- 19- P. Njionou Sadjang, W. Koepf and M. Foupouagnigni, On moments of classical orthogonal polynomials, *J. Math. Anal. Appl.* 424 (2015) 122–151;
- 20- D. D. Tcheutia, M. Foupouagnigni, W. Koepf, P. Njionou Sadjang, Coefficients of Multiplication Formulas for Classical Orthogonal Polynomials, *Ramanujan Journal* 39: 497-531, 2016, DOI: 10.1007/s11139-015-9682-z
- 21- P. Njionou Sadjang, W. Koepf and M. Foupouagnigni, On structure formulas for Wilson polynomials, *Integral Transforms and Special Functions*, Vol. 26, Iss. 12, 1000-1014, 2015.
- 22- D. D. Tcheutia, P. Njionou Sadjang, W. Koepf and M. Foupouagnigni, Divided-difference equation, inversion, connection, multiplication and linearization formulae for the continuous Hahn and the Meixner-Pollaczek polynomials, *Ramanujan Journal* 2017, DOI: 10.1007/s11139-016-9870-5
- 23- D. D. Tcheutia, Y. Guemo Tefo, M. Foupouagnigni, E. Godoy and I. Area, Linear partial divided difference equation satisfied by multivariate orthogonal polynomials on quadratic lattices, *Mathematical Modeling of Natural Phenomena*, 12 3 (2017) 14-43
- 24- M. Njinkeu Sandjon, A. Branquinho, M. Foupouagnigni and I. Area, Characterizations of classical orthogonal polynomials on quadratic lattices, *Journal of Difference Equations and Applications*, 1-20, 2017

- 25- S Mboutngam, M. Foupouagnigni and P. Njionou Sadjang, On the modifications of semi-classical orthogonal polynomials on nonuniform lattices, Journal of Mathematical Analysis and Applications 445 (1), 819-836, 2017

Papers submitted or in progress

1. M. Foupouagnigni and S. Mboutngam, On semi-classical orthogonal polynomials on nonuniform lattices: characterization and classification.
2. M. Foupouagnigni and S. Mboutngam, Hahn problem for orthogonal polynomials solution of second-order linear homogeneous difference, q -difference or divided-difference equation with polynomial coefficients.
3. M. Foupouagnigni and M. Kenfack-Nangho: Characterization theorem for Laguerre-Hahn orthogonal polynomials on non-uniform lattices.
4. M. Foupouagnigni, M. Kenfack-Nangho and W. Koepf : On Exponential and Trigonometric functions on non-uniform lattices.
5. D. D. Tcheutia, M. Foupouagnigni, Y. Guemo Tefo and I. Area, Divided-difference equation and three-term recurrence relations of some bivariate q -orthogonal polynomials, submitted

Supervision within the grade of Associate Professor (2006-2013)

- 05 Master thesis supervised at the Mathematics Department of the faculty of Science of the University of Yaounde I;
- 22 DIPES II thesis (Equivalent of Master Thesis) supervised at the Department of Mathematics of the Higher Teachers' Training College;
- 02 PhD thesis supervised:
 - o (Kenfack Nangho Maurice: Title "On Laguerre-Hahn Orthogonal Polynomials On Nonuniform Lattices") defended on February 28, 2014 at the Mathematics Department of the faculty of Science of the University of Yaounde I;
 - o 01 PhD thesis supervised (Mboutngam Salifou, Title: "On Semi-classical Orthogonal Polynomials on Nonuniform Lattices"), defended on September 24, 2014 at the Mathematics Department of the faculty of Science of the University of Yaounde I;
- 02 PhD thesis co-supervised:
 - o Njionou Sadjang Patrick: Title "Moments of Classical Orthogonal Polynomials") at the mathematics Department of the University of Kassel, thesis defended on 22.10.2013 and supervised in collaboration with my colleague Prof. Wolfram Koepf of the University of Kassel;
 - o Tcheutia Duviol Daniel, Title" Connection, Linearisation and Duplication Coefficients of Classical Orthogonal Polynomials") at the mathematics Department of the University of Kassel, thesis defended on July 14, 2014 at the University of Kassel; and supervised in collaboration with my colleague Prof. Wolfram Koepf of the University of Kassel;
- 03 other PhD supervision in progress: Mouafo Wouodjie Merlin, Nguemo Tefo Yves and Njinkeu Sanjong Marlyse.

Selected Invitations and scientific meetings (during some of which I have delivered talks (talks can be found in Google))

- International Congress of Mathematicians Seoul, Korea, 13-21 August 2014;
- 2-3/07/2012, Catholic University of Leuven (Belgium), Approximation day 2012;

- 06-07/2012: University of Kassel, Department of Mathematics and Computer Science, Kassel, Germany;
- 16-18/11, 2011: Setting up Workshop of the African German Network for Excellence in Sciences, Addis-Ababa, Ethiopia (Organized by the Humboldt Foundation).
- 21-23/11, 2011: 8th Steering Committee meeting of the Pan-African eNetwork project, Addis Ababa, Ethiopia(Organized by the African Union),
- 29/08-02/09, 2011: [The 11th International Symposium on Orthogonal Polynomials, Special Functions and Applications](#), University Carlos 3, Madrid, Madrid, Leganes,
- 25-28/07/2010: [The International Symposium on Symbolic and Algebraic Computation \(ISSAC\): Munich, Germany;](#)
- 07-09/2010: University of Kassel, Department of Mathematics and Computer Science, Kassel, Germany;
- 20-25/07/2009: [10th International Symposium on Orthogonal Polynomials, Special Functions and Applications](#): Leuven, Belgium;
- 07-09/2009 University of Kassel, Department of Mathematics and Computer Science, Kassel, Germany;
- 11/2008 University of Kassel, Department of Mathematics and Computer Science, Kassel, Germany;
- 9-10/2008 [United nations University, Vice-Rectorate Bonn](#)
- 9-10/2008 University of Duisburg Essen, University of Bochum
- 8-9/2007 Chalmers University, Department of Mathematics, Gothenburg, Sweden
- 08/2007 University of Kassel, Department of Mathematics and Computer Science, Kassel, Germany;
- 7/2006, University of Vigo, Departamento de Matematica Aplicada II, ETSI, Vigo, Spain
- 7-9/2006, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy;
- 06/2006 University of Kassel, Department of Mathematics and Computer Science, Kassel, Germany;
- 09/2005-11/2005 The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy;
- Copromaths Benin
- 25-29/07/2005 International Conference on Difference Equations, Special Functions and Applications, Munich, Germany;
- 06/2005-08/2005 University of Kassel, Department of Mathematics and Computer Science, Kassel, Germany;
- 10/2003 International Workshop on Special functions, orthogonal polynomials, quantum groups and related topics, dedicated to Dick Askey on his 70th birthday, Bexbach (October 18-22), Germany;
- 10/2003 University of Kassel, Department of Mathematics and Computer Science, Kassel, Germany;
- 07/2003-09/2003 The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy;
- 08/2002 Summer School in Orthogonal Polynomials and Special Functions, Leuven, Belgium;
- 06/2002 International Workshop on Orthogonal Polynomials and Approximation Theory, Leganes (Madrid) Spain;
- 02/2002 Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium;
- 11/2001 - 11/2002 University of Kassel, Department of Mathematics and Computer Science, Kassel, Germany;

Some selected Successful Projects:

- Research Group Linkage (2009-2012) linking the University of Yaounde I and the University of Kassel (Funded by the Humboldt Foundation);
- eLearning for the University of Yaounde I, linking the University of Yaounde I, the United Nation University Bonn, the Baden-Württemberg Cooperative State University, Stuttgart, Germany, the University of Cape Town (South Africa), the Kenyatta University (Kenya), funded by the DAAD;

- Production of Education Resources for “Terminale” Classes in Mathematics for the Central Africa, linking The University of Paris Diderot, France, The Marien Gouabi University and the University of Yaounde I (Funded by the Fonds Francophone Inforoute).
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Done in Limbe, June 10, 2017

Prof. Dr. Mama Foupouagnigni