



Mongi BLEL

Curriculum Vitæ (January 6, 2021)

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APPOINTMENTS

Professor of Mathematics 2008-Present
King Saud University, College of Sciences, Department of Mathematics

Professor of Mathematics 2006-2008
University of Monastir, College of Sciences, Department of Mathematics

Professor of Mathematics 2004-2006
King Saud University, College of Sciences

Professor of Mathematics 1997-2004
University of Monastir, College of Sciences, Department of Mathematics

Associate Professor of Mathematics 1993-1997
University of Monastir, College of Sciences, Department of Mathematics

Assistant Professor of Mathematics 1983-1993
University of Monastir, College of Sciences, Department of Mathematics

Teaching Assistant of Mathematics 1981-1983
University of Monastir, College of Sciences, Department of Mathematics

Teaching Assistant of Mathematics 1979-1980
University of Paris VI (France), Department of Mathematics

EDUCATION

PhD Mathematics 2003
University Tunis, Faculty of Sciences, Department of Mathematics
Doctorat d'Etat: Title: "Potential and tangent cone associated to a closed positive current".
Advisors: [J.P. Demailly](#) and Hassine El Mir.

PhD Mathematics 1981
University Paris VI (Pierre and Marie Curie)

Title: “Plurisubharmonic functions and ideal defining an analytic subset in \mathbb{C}^n ”.

Advisor: [Henri Skoda](#).

Master Mathematics

1979

University Paris VI (Pierre and Marie Curie)

Advisor: Pierre Lelong (Paris VI), [Henri Skoda](#), [Michel Waldschmidt](#).

BSc Mathematics

1974-1978

University Tunis, Faculty of Sciences, Department of Mathematics

(First rank among all students).

AWARDS

- First Presidential Prize in Mathematics, 1978, First rank among all the students of Tunisian Universities.
- Scholarship for Master and PhD degree (Mathematics) at University Paris VI (Jussieu), France, granted by French Ministry of Foreign Affairs, 1978, (October 1978- September 1981).

TEACHING

- Undergraduate: Calculus, Algebra, Analysis I, Analysis II, Differential Equations, Fourier Analysis and Distributions, Complex Analysis,.
- Postgraduate: Complex Analysis, Functional Analysis, Measure Theory, Partial Differential Equations (special topics), Differential Geometry, Fourier Analysis and Distributions (special topics), Several Complex Analysis (special topics), Potential Theory (special topics).

RESEARCH GROUPS

Principal investigator of the research project: Nonlinear Evolution Equations, **14-MAT730-02** National Science Technology and Innovation Plan, (NPST), (February 2020).

RESEARCH PAPERS

1. M. BLEL, “[Plurisubharmonic functions and ideal defining an analytic subset \(French\)](#)”, **Lectures Notes in mathematics, 919. Séminaire P. Lelong, H Skoda (Analyse) et Colloque de Wimereux Mai 1981, Springer-Verlag** , (1981).
2. M. BLEL, “[On the singularities of analytic subsets \(French\)](#)”, **Séminaire Lelong - Skoda Lectures- notes n° 1198, Springer-Verlag** , (1984).
3. M. BLEL, “[On the singularities of analytic subsets \(French\)](#)”, **C.R.A.S. Paris; série I, t 298 n° 4, , (1984)**.
4. M. BLEL, “[Tangent cone associated to a closed positive current of type \(1,1\)](#)”, **C.R.A.S.Paris t 309 série I,p.543-546,, (1989)**.
5. M. BLEL, J.P.Demailly, M.Mouzali, “[On the existence of the tangent cone associated to a closed positive current](#)”, **Arkiv för Matematik Vol 28 n° 2,, (1990)**.

6. M. BLEL, “On the tangent cone associated to a closed positive current”, *Astérisque* *n° 217*, (1992).
7. M. BLEL, “On the tangent cone associated to a closed positive current”, *Journal de Mathématiques pures et Appliquées* *n° 72*, pp 517-536,, (1993).
8. M. BLEL, “On the tangent cone associated to a closed positive current”, *C.R.A.S.Paris t 314 série I*,p.887-890,, (1993).
9. M. BLEL, “Locus of exceptional points to a closed positive current in \mathbb{C}^n .”, *C.R.A.S, Paris, t 322, serie I*,, (1996).
10. M. BLEL., “Locus of exceptional points to a closed positive current in \mathbb{C}^n .”, *Bulletin des Sciences Mathématiques*, vol 24, *n° 2*, (1996).
11. M. BLEL, G. Raby, Mimouni Souad, “Algebraic and Liouville currents”, *Annali Polonici Math*, 86, 3, (2005).
12. M. BLEL, Mimouni Souad, “Singularities and integrability of plurisubharmonic functions”, *Annales de l’Institut Fourier de Grenoble*, tome 55, fascicule 2, (2006).
13. M. BLEL, “**m-Symmetric d-Orthogonal Polynomials**”, *Modeling, Simulation and Applied Optimization (ICMSAO), Fourth International Conference on modeling simulation and applied optimization*, pp 1-21, Print ISBN: 978-1-4577-0003-3 INSPEC Accession Number: 12031955 Conference Location : Kuala Lumpur , (2011).
14. M. BLEL, “On **m-Symmetric d-Orthogonal Polynomials**”, *C. R. Acad. Sci. Paris, Ser. I* 350, 19-22, (2012).
15. M. BLEL, Al-Fadhel Tariq, “On Möbius Transforms with n -cycle, Geometric viewpoint”, *Arab Journal of Mathematical Sciences*, (2013).
16. M. BLEL, Jamel Benameur, “Pollaczek Polynomials and Hypergeometric Representation”, *The Ramanujan Journal*., (2013).
17. M. BLEL, Jamel Benameur, “Long Time Decay to the Solution of the 2D dissipative quasi-geostrophic equation”, *Abstract and Applied Analysis. Abstract and Applied Analysis Volume 2012*, (Hindawi Publishing Corporation). Article ID 627813., (2013).
18. M. BLEL, Jamel Benameur, “Asymptotic Study of the 2D-DQGE Solutions”, *Journal of Function Spaces Volume 2014*, Article ID 538374, Hindawi Publishing Corporation <http://dx.doi.org/10.1155/2014/538374..>, (2014).
19. M. BLEL, Youssèf Ben Cheikh, “ d -Orthogonality of a generalization of both Laguerre and Hermite Polynomials”, *Georgian Mathematical Journal*, Volume 27, Issue 2 pp 183-190 (2020).
20. M. BLEL, Youssèf Ben Cheikh, “On some **m-Symmetric Generalized Hypergeometric d-Orthogonal Polynomials**”, *Preprint* , (2021).
21. M. BLEL, Lotfi Jleli, “Blow-up of the Burgers equations”, *Preprint* , (2021).

INVITED PROFESSOR

- Invited Professor at the Grenoble University (Institut Fourier) (March-April) 1990.
- Invited Professor at Grenoble University (Institut Fourier), six months: (October-March) 1991-1992.
- Invited Professor at Poitiers University, one month 1997.
- Invited Professor at ICTP (Italy), September 2000.

INVITED TALKS AT INTERNATIONAL CONFERENCES

1. Annual International Conference on Computation Mathematics, Computational Geometry and Statistics (CMGS 2014) , Singapore , **Asymptotic Study of the 2D-DQGE Solutions** (February 3-4, 2014)
2. College of Applied Sciences. Umm Al-Qura University, Makkah, **On some m -Symmetric Generalized Hypergeometric d -Orthogonal Polynomials** (April 16-18, 2012)
3. International Symposium on Orthogonal Polynomials and Special Functions-a Complex Analytic Perspective, Copenhagen June , **d -Orthogonality of a unified presentation of Laguerre and Hermite Polynomials** (11 -15 2012)
4. Fourth International Conference on modeling simulation and applied optimization 2011 (ICMSA'11)", Center for artificial intelligence and robotic. , Kuala Lumpur, Malaysia., **On m -symmetric d -Orthogonal Polynomials** (Mars 2011)
5. Fourth Saudi Science Conference, Contribution of Science Faculties in the Development Process of KSA. , Al-Madina Al-Munawwarah, ., **On m -symmetric d -Orthogonal Polynomials** (March 21-24, 2010)
6. International Symposium on the complex structures and vector fields, Varna, Bulgaria, Locus of exceptional points to a closed positive current and multi-directional tangent cone (1997)
7. Poitiers University, Poitiers, Algebraic and Liouville currents (November 1998)
8. Institut Fourier, Grenoble University, December, 1995 **On the existence of the tangent cone of closed positive currents**
9. Poitiers University, Poitiers, (November, 1995)
10. Institut Fourier, Grenoble University, **Sufficient conditions on the existence of the tangent cone of closed positive currents** (December 1993)
11. International Symposium on Complex Analysis,, C.I.R.M, Marseille, France, **On the tangent cone to closed positive current** (13-17 January 1992)
12. Mittag-Leffler Institut, , Djursholm, Sweden, (September-October 1987)
13. International Conferences on Complex Analysis, , Varna, Bulgaria, (1985) **Plurisubharmonic Functions and ideal defining an analytic subset**
14. International symposium on Complex Analysis, , Toulouse, France, (1984) **On the singularities of analytic subsets**

SEMINARS AND WORKSHOPS

1. Co-Organizer of the International Workshop on Special Functions Orthogonal- Polynomials and Applications, KSU, , 2013.
2. Organizer of French-Tunisian Conferences on Complex Analysis and Geometry, , Monastir, Tunisia, 1-2 May 2008
3. Co-Organizer of International Summer School in Several Complex Analysis, with El Mir Hassine, Ben Messaoud H, University of Monastir,, 14-31 July 2004
4. University of Monastir, Co-Organizer of Weekly Seminar in Several Complex Analysis (with El Mir Hassine, Ben Messaoud Hedi, 1984-2004
5. Poitiers University, Weekly Seminar, 1995-1997-2000-2003
6. Institut Fourier, Weekly Seminar, 1991-1992-1993-1995-1997-2000-2001
7. Tunisian Mathematical Society, Annual Congress, 1991 to 2004

BOOKS

- **Complex Analysis**, p:379, Postgraduate degree, (2020). King Fahd National Library Cataloging-in-Publication Data. (King Saud University), **L.D. No. 1441/1737, ISBN: 978-603-507-802-3**
- **Complex Analysis**, Undergraduate degree, (2021). (King Saud University)
- **Measure Theory and Fourier analysis**, Postgraduate degree, (2021). (King Saud University).

BOOKS IN PREPARATION

- **Analysis I**, Undergraduate degree.
- **Analysis II**, Undergraduate degree.

TEXBOOKS

1. **Integral Calculus**, Course, slides and exercises.
2. **Discrete mathematics**, slides and exercises.
3. **Analysis I**, slides and exercises.
4. **Linear Algebra**, slides.
5. **Topology**, slides and exercises.
6. **Analysis II**, slides and exercises.
7. **Several Complex Variables**, Postgraduate.

THESES SUPERVISED

1. **Director of the Research Unity 02/UR/1501** "Complex Analysis and Special Functions", University of Monastir, Tunisia.
2. **MSc student:** Khemiri Souad, University of Monastir, Tunisia, (1998) On the exponent of complex singularities
3. **Ph.D Student:** Khemiri Souad, University of Monastir, Tunisia, (2001) Singularities of plurisubharmonic functions and Liouville's currents
4. **Ph.D Student:** Hagui Fethi, University of Monastir, Tunisia, (November 2002) Currents and plurisubharmonic functions on the almost complex manifolds
5. **Co-supervisor with Abbes Bahri, Ph.D Student:** Yacoub Ridha, University of Monastir, Tunisia, (2002) Yamabe's Problem and curvature equations on compact manifolds
6. **Co-supervisor with Aziz El Kacimi, MSc Student:** Slimène Jihène, University of Monastir, Tunisia, (2004) Borel-Harder for Kleinean elementary group
7. **Co-supervisor with Ourimi Nabil, MSc Student:** Ayed Bisma, University of Monastir, Tunisia, (2004) Proper functions and applications between domains of \mathbb{C}^n .
8. **Co-supervisor with Aziz El Kacimi, Ph.D Student:** Slimène Jihène, University of Monastir, Tunisia, (2008) On the $\bar{\partial}$ on some foliation spaces
9. **MSc student:** Rehab Habib Al-Harbi, King Saud University, (June 2012) Schwarz Lemma and Applications to Non Euclidian Geometry
10. **MSc student:** Jlali Lotfi, King Saud University, (June 2013) The 2D Dissipative Quasi-Geostrophic Equation

RESEARCH INTERESTS

1. Primary Mathematical Analysis (Real and Complex). Several Complex Variables. Currents and integration on analytic subsets. Monge-Ampere Operator. Functional analysis. Partial differential equations.
(AMS Subject Classification: (2000) 32C30 (main), 32C25).
2. Möbius transformation, fixed point, conformal mapping, orbit, complex dynamics.
(AMS Subject Classification: (2000) Primary 30C35, 37F10. Secondary 51M15).
3. Orthogonal Polynomials, d -orthogonality, Multi-orthogonality, m -symmetric polynomial sequence, m -symmetric linear functional, Generalized hypergeometric polynomials, Pollaczek Polynomials, Hypergeometric Functions, Pfaff Euler Transformation.
(AMS Subject Classification: (2000) 33C45, 33C47, 33C50, 42C05).
4. Partial Differential Equations, Two dimensional Navier-Stokes equations, Leray solution, Zero limit, Long time decay, Stability, Regularity
(AMS Subject Classification: (2000) 35Q30, 35D30, 35B40, 35B35).

PROFESSIONAL ACTIVITIES

1. Refereed Research Proposals

- El Manar University (Tunis), Tunisia.
- Monastir University (Tunis), Tunisia.
- King Khaled University, Saudi Arabia.
- Sfax University, Tunisia.
- Nora Bint Abdul Rahman University, Saudi Arabia.

2. Examiner of Postgraduate Students:

2018

- Abeer Ahmed Abdullah, King Faical University, (Saudi Arabia).

2015

- Mohammed Abduljeel Abdoh Ghalb, King Faical University, (Saudi Arabia).

2013

- Fayza Iwadh Shehry, King Abdulaziz University, (Saudi Arabia).
- Imed Feki, Sfax University, (Tunisia).
- Amnah Essa Shammaky, King Khaled University, (Saudi Arabia).

2012

- Amshaa Khalaf Al-Hansar, King Saud University, (Saudi Arabia).
- Khelifa Dabbek, Monastir University, (Tunisia).

2011

- Badriah Abdurrahman Al Amri, King Abdulaziz University, (Saudi Arabia).

2010

- Ghiloufi Jamel, Sfax University, (Tunisia).
- Ayed Bisma, Monastir University, (Tunisia).

2009

- Balsam Ali Al-Suhaibani, King Saud University, (Saudi Arabia).

2007

- Moncef Toujani, Monastir University, (Tunisia).

2005

- Adel Jawahdou, Carthage University, (Tunisia).

2002

- Elkhadra Fredj, Monastir University, (Tunisia).

1998

- Stéphane Giret, Poitiers University, (France).
- Labidi Jamel , Monastir University, (Tunisia).

1995

- Hedi Ben Messaoud, El Manar University, (Tunisia).

1994

- Maarouf Anouar, Grenoble University, Institut Fourier, (France).
- El Moctar Ould Ahmed Ould Beiba, El Manar University, (Tunisia).

REVIEWER

1. Editor in journal **Arab Journal of Mathematics and Applications**, (King Saud University), (<https://www.sciencedirect.com/journal/arab-journal-of-mathematical-sciences/about/editorial-board>)
2. Reviewer in “**Complex Variables and Elliptic equations**” (2018) (Associated with the International Society for Analysis, its Applications and Computation) ISI Journal, 2016 Impact Factor 0.616.
3. Reviewer in “**Filomat**” (2018) (<http://journal.pmf.ni.ac.rs/filomat>) ISI Journal, Impact Factor 0.695 in 2016.
4. Reviewer in “**Mathematical Reviews**” 1994-2005.
5. Reviewer in “**Magreb Mathematical Reviews**”.
6. Reporter of the book “**Representations of finite groups**” (Al-Imam Mohammad Ibn Saud Islamic University)-2017.
7. Reporter of the book “**Integral Calculus and Applications**” (King Saud University)-2017.
8. Reporter of the book “**Functional Analysis**” (King Faycal University)-2015.

UNIVERSITY SERVICE ACTIVITIES

1. **Memberships in Professional Societies**
 - American Mathematics Society (AMS) 1995-2004.
 - Tunisian Mathematical Society since 1991-Present.
 - Saudi Mathematical Society since 2008-Present.
 - Tunisian Association of Mathematical Sciences (ATSM) and President of Monastir section (1990-1993).
2. **University Service Activities**
 - Head of the Department of Mathematics (1993-1996).
 - Member of the National Promotion Committees of Assistant-Professor 1996-1998, 1998-2000, 2004-2006.
 - National Promotion Committees of Assistant 1996-1998, 1998-2000.
 - Member of the Scientific Council of the High Institute of Textile (Ksar-Hellal, Tunisia), 1984-1986.
 - Member of the Scientific Council of the Faculty of Sciences of Monastir (Tunisia), 1990-1993.
 - Member of the Scientific Council of the Faculty of Sciences of Monastir (Tunisia), 1996-1998.
 - Responsible of the national competition of height engineer schools at 1999, 2000, 2001, 2002, 2003, 2004, 2008.
 - Member of the Qualifying Examination Committee at the Department of Mathematics (KSU).
 - Rapporteur of the Academic Higher Studies Accreditation Commission (Until 2012)