



Mongi BLEL

Curriculum Vitæ (January 15, 2025)

<i>Birth</i>	20 December 1954, Téboulba, Tunisia
<i>Nationality</i>	Tunisian
<i>Marital Status</i>	Married
<i>Address</i>	College of Science , King Saud University, Mathematic Department
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APPOINTMENTS

Professor of Mathematics <i>King Saud University, College of Sciences, Department of Mathematics</i>	2008-Present
Professor of Mathematics <i>University of Monastir, College of Sciences, Department of Mathematics</i>	2006-2008
Professor of Mathematics <i>King Saud University, College of Sciences</i>	2004-2006
Professor of Mathematics <i>Tunis University</i>	1997-2004
Associate Professor of Mathematics <i>University of Monastir, College of Sciences, Department of Mathematics</i>	1993-1997
Assistant Professor of Mathematics <i>University of Monastir, College of Sciences, Department of Mathematics</i>	1983-1993
Teaching Assistant of Mathematics <i>University of Monastir, College of Sciences, Department of Mathematics</i>	1981-1983
Teaching Assistant of Mathematics <i>University of Paris VI (France), Department of Mathematics</i>	1979-1980

EDUCATION

PhD Mathematics <i>University Tunis, Faculty of Sciences, Department of Mathematics</i>	1992
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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).

LANGUAGES

Arabic (Native language)

French

English.

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).

Researchers supporting project number RSPD2023R753, King Saud University.

Researchers supporting project number RSPD2024R753, King Saud University.

Researchers supporting project number RSPD2025R753, King Saud University.

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, Jamel Benameur, “[Long Time Decay of Leray Solution of 3D-NSE With Exponential Damping](#)”, **Journal: Fractals** , <https://www.worldscientific.com/doi/pdf/10.1142/S0218348X22402368>, Vol. 30, No. 10, 2240236 (10 pages) (2022).
21. M. BLEL, “[On some m-Symmetric Generalized Hypergeometric d-Orthogonal Polynomials](#)”, <https://doi.org/10.2298/FIL2404279B> **Filomat 2024,38- 4** , 1279–1289 (2024).
22. M. BLEL, Jamel Benameur, “[Asymptotic study of Leray solution of 3D-Navier-Stokes equations with exponential damping](#) ”, **Demonstratio Mathematica** , <https://doi.org/10.1515/dema-2022-0208> (2023).
23. M. BLEL, Jamel Benameur, “[Asymptotic Analysis of Leray Solution for the Incompressible NSE With Damping](#) ”, *Demonstratio Mathematica 2024; 57: 20240042* , (2024).
24. M. BLEL , “[Blow-up Results for Some Type of Partial Differential Equations in Exterior Domains in The Heisenberg group](#)”, , (2024).
25. M. BLEL, Lotfi Jleli, “[Blow-up of Burgers equations](#)”, **Preprint** , (2024).
26. M. BLEL, Lotfi Jleli, “[Fujita Type Criteria for Some Type of Partial Differential Equations in Exterior Domains in The Hyperbolic Space](#)”, **Journal of Mathematical Inequalities** , (2025).
27. M. BLEL, Lotfi Jleli, “[Local and Global Solutions of 3D-NSE in Lei-Lin Gevrey Spaces](#)”, **Preprint** , (2025).
28. M. BLEL, Lotfi Jleli, “[Global Well Posedness of 3D-NSE in Lei-Lin Gevrey Spaces](#)”, **Preprint** , (2025).

INVITED PROFESSOR

- Invited Professor at 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** (Febreary 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- 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, (1983) **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, University of Monastir,, 14-31 July 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**

BOOKS IN PREPARATION

- **Complex Analysis**, Undergraduate degree, (2022). (King Saud University)
- **Measure Theory and Fourier analysis**, Postgraduate degree, (2022). (King Saud University).
- **Analysis I**, Undergraduate degree.
- **Analysis II**, Undergraduate degree.
- **Linear Algebra**: Undergraduate degree .
- **Differential Equations**: Undergraduate degree .

TEXTBOOKS

1. **Integral Calculus**: Textbook and slides.
2. **Discrete Mathematics**: Textbook and slides.
3. **Analysis I**: Textbook and slides.
4. **Linear Algebra**: Textbook and slides.
5. **Topology**: Slides and exercises.
6. **Differential Equations**: Textbook and slides.
7. **Analysis II**: Textbook and slides.
8. **Algebra II**: Textbook (French).
9. **Fourier Analysis, Postgraduate**: Textbook.
10. **Several Complex Variables, Postgraduate** Textbook.

THESES SUPERVISED

1. **Ph.D Student**:Fatimah Abdullah Alrusaini, King Saud University,(2022)New classes of Unavoidable Prime Graphs
2. **MSc student**:Lotfi Jlali, King Saud University,(2013)The 2D Dissipative Quasi-Geostrophic Equation
3. **MSc student**:Rehab Habib Al-Harbi, King Saud University,(June 2012)Schwarz Lemma and Applications to Non Euclidian Geometry

4. **Co-supervisor with Aziz El Kacimi, Ph.D Student:** Slimène Jihène, University of Monastir, Tunisia, (2008) On the $\bar{\partial}$ on some foliation spaces
5. **Co-supervisor with Ourimi Nabil, MSc Student:** Ayed Besma, University of Monastir, Tunisia, (2004) Proper functions and applications between domains of $\mathbb{C}^n$.
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 Abbes Bahri, Ph.D Student:** Yacoub Ridha, University of Monastir, Tunisia, (2002) Yamabe's Problem and curvature equations on compact manifolds
8. **Ph.D Student:** Hagui Fethi, University of Monastir, Tunisia, (November 2002) Currents and plurisubharmonic functions on the almost complex manifolds
9. **Ph.D Student:** Khemiri Souad, University of Monastir, Tunisia, (2001) Singularities of plurisubharmonic functions and Liouville's currents
10. **MSc student:** Khemiri Souad, University of Monastir, Tunisia, (1998) On the exponent of complex singularities

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 transformations, 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).

REVIEWER

1. Editor of 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 of "**Open Journal of Mathematical Sciences**" (2021).

3. Reviewer of “**Complex Variables and Elliptic equations**” (2018) (Associated with the International Society for Analysis, its Applications and Computation) ISI Journal, 2016 Impact Factor 0.616.
4. Reviewer of “**Filomat**” (2018) (<http://journal.pmf.ni.ac.rs/filomat>), (2016).
5. Reviewer of “**Mathematical Reviews**” 1994-2005.
6. Reviewer of “**Magreb Mathematical Reviews**”.

Riyadh, January, 2025