



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

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- 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

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- 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 PAPERS

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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<sup>o</sup> 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,** Accepted (2017).
20. M. BLEL, Youssèf Ben Cheikh, “On some m-Symmetric Generalized Hypergeometric d-Orthogonal Polynomials”, **Preprint ,** (2017).

## **INVITED PROFESSOR**

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- 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

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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-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

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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 IN PREPARATION**

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- Complex Analysis, approx 400 pages, Postgraduate degree (2017).
- Complex Analysis, approx 400 pages, Undergraduate degree (2017).
- Measure Theory, approx 200 pages, Postgraduate degree (2015-2016) .
- Analysis I, approx 250 pages, Undergraduate degree (2015) .
- Analysis II, approx 250 pages, Postgraduate degree (2015-2016) .
- Analysis III, approx 250 pages, Postgraduate degree (2015-2016) .

## **RESEARCH AND THESES SUPERVISED**

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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 Besma, 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 foliations 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**

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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**

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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:**
  - Monastir University, Tunisia,
    - a) Khelifa Dabbek (2012)
    - b) Ayed Bisma (2010)
    - c) Moncef Toujani (2007)
    - d) Elkhadra Fredj (2002)
    - e) Labidi Jamel (1998)
  - Poitiers University, France.  
Stéphane Giret (1998)
  - Sfax University, Tunisia.

- a) Imed Feki (2013)
- b) Ghiloufi Jamel (2010)
- El Manar University, Tunisia.
  - a) Hedi Ben Messaoud "Doctorat d'état" (1995), "Opérateur de Monge-Ampère, tranchage et extension des courants positifs fermés"
  - b) El Moctar Ould Ahmed Ould Beiba (1994)
- Grenoble University, Institut Fourier, Maarouf Anouar (1994)
- Carthage University, Tunisia. Adel Jawahdou, June 2005.
- King Faical University, Saudi Arabia. Mohammed Abduljeel Abdoh Ghalb, February 22, 2015.
- King Saud University, Saudi Arabia,
  - a) Amshaa Khalaf Al-Hansar (2012)
  - b) Balsam Ali Al-Suhaibani (2009)
- King Khaled University, Saudi Arabia. Amnah Essa Shammaky (2013), "Some Sandwich Results and Applications of Differential Subordination Associated With Analytic Functions".
- King Abdulaziz University, Saudi Arabia.
  - a) Fayza Iwadh Shehry (2013), King Khaled University Abha. (Numerical Conformal Mapping of Bounded Multiply Connected Circular Domain onto a Strip with Parallel Slits).
  - b) Badriah Abdurrahman Al Amri (2011), (Applications of Differential Subordination for Certain Classes of Univalent and Multivalent Functions).

### 3. Reporter of Books:

- Reporter of book "Functional Analysis" (King Faycal University)-2015.
- Reporter of book "Integral Calculus and Applications" (King Saud University)-2017.
- Reporter of book "Representations of finite groups" (Al-Imam Mohammad Ibn Saud Islamic University)-2017.

## **UNIVERSITY SERVICE ACTIVITIES**

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### 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)

## 3. Reviewer

- Reviewer in “Mathematical Reviews” 1994-2005.
- Reviewer in “Magreb Mathematical Reviews”.

## **TEXBOOKS**

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1. Analysis I, Course and solved exercises.
2. Analysis II, Course and solved exercises.
3. Algebra II, Course and Exercises.
4. Complex Analysis, Course and solved exercises.
5. Measure Theory, Course and solved exercises.
6. Fourier Analysis, Course and solved exercises.
7. Several Complex Variables, Course, Post-Graduate.

Riyadh, December, 2017