

# Curriculum Vitae

## ALI BAKLOUTI

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### Personal

Date of birth: 02-23-1967

Citizenship: Tunisian

Diploma: Ph.D degree from the University of Metz (France), 1995

Habilitation Thesis, the University of Sfax (Tunisia), 1998

### Awards and Honours

- [Royal Society Africa Prize 2024](#)
- [Order of Merit for Education and Teaching](#): President of the Republic of Tunisia Prize 2024
- [AMU-PACOM 2022, Awards & Medals, Category A in Mathematics](#), African Mathematical Union 2022
- Speaker at the [International Congress of Mathematicians–ICM 2002](#), Beijing, China (International Mathematical Union)

### Professional and Academic Recognitions

- Full Professor, Department of Mathematics, [Faculty of Sciences of Sfax](#)
- Member of the [Tunisian academy of Sciences](#), *Letters and Art: House of wisdom*. Since December 2016
- Head of [the Research Laboratory Applied Mathematics and Harmonic Analysis](#), LAM-HA: LR11ES52, University of Sfax. Since 2011
- Deputy Director of the [Mediterranean Institute of Mathematical Sciences](#). Since 2012
- [Higher Expert in Research and Education](#), Erasmus+ Tunisia office-European Commission, since 2023
- President of the [Tunisian Mathematical Society](#). (April 2016-March 2023)
- [Vice-President of the University of Sfax](#). (2020-2024)
- [Vice-Dean of the Faculty of Sciences of Sfax](#). (2002-2005)

### Editorial Service

I am currently serving as an editor for the following Mathematical Journals:

- [Advances in Pure and Applied Mathematics](#) (ISTE-Elsevier, UK) (**Editor-in-Chief**)
- [Tunisian Journal of Mathematics](#) (MSP, Berkeley, USA) (**Co-Editor-in-Chief**)
- [The Graduate Journal of Mathematics](#) (MIMS) (**Editor**)
- [Arabian Journal of Mathematics](#) (Springer) (**Editor since 2024**)

### Published Books

- Ali Baklouti, Hidenori Fujiwara and Jean Ludwig: *Representation Theory of Solvable Lie*

*Groups and Related topics*. [Springer Monographs in Mathematics](#), 2021. (610 pages)

• Ali Baklouti: *Deformation Theory of Discontinuous Groups*: [De Gruyter Expositions in Mathematics](#), 2022. (498 pages)

## Scientific Publications

- [1] **A. Baklouti**, *Le Cortex en dimension six*. Publication du centre universitaire de Luxembourg. Fascicule V, 1993(7-45)
- [2] **A. Baklouti**, *On the Cortex of connected Simply connected Nilpotent Lie Groups*. Russ. J. Math. Physics. Volume 5, Number 3. 1997(281-294)
- [3] **A. Baklouti**, J. Ludwig et M. Selmi: *Séparation des représentations unitaires et irréductibles des groupes de Lie nilpotents*. Lie Theory & Applications. Vol. 2. 1997 (75-91)
- [4] **A. Baklouti**, *Nouvelle désintégration lisse de  $L^2(G)$  pour les groupes résolubles exponentiels*. Journal of Lie Theory. Volume 8.1998 (1-26)
- [5] **A. Baklouti**, J. Ludwig, *Désintégration des représentations monomiales des groupes de Lie nilpotents*. Journal of Lie Theory. Volume 9. N 1. 1999 (157-191)
- [6] **A. Baklouti**, *Harmonic Analysis On Invariant Differential Operators On Nilpotent Homogeneous Spaces*. Russ. J. Math. Physics. Vol. 6, N 2. 1999 (125-136)
- [7] **A. Baklouti** and J. Ludwig, *The Penney-Fujiwara Plancherel Formula for nilpotent Lie groups*. J. Math. Kyoto Univ. Volume 40, N 1. 2000
- [8] D. Arnal, **A. Baklouti**, J. Ludwig and M. Selmi, *Separation of Unitary representations of exponential solvable Lie groups*. Journal of Lie Theory. Volume 10. N 2. 2000 (399-410)
- [9] **A. Baklouti** et J. Ludwig, *Entrelacement des restrictions des représentations unitaires des groupes de Lie nilpotents*. Annales de L'institut Fourier. Grenoble, Vol. 51, No 2, 2001 (1-35)
- [10] **A. Baklouti**, C. Benson and G. Ratcliff, *Moment Separation of the unitary dual of nilpotent Lie Groups*. Journal of Lie Theory. Volume 11. N 1, 2001 (153-154)
- [11] **A. Baklouti** and J. Ludwig, *Invariant Differential Operators On Certain Nilpotent Homogeneous Spaces*. Monatshefte für Mathematik, Vol. 134, N 1, 2001 (19-37)
- [12] **A. Baklouti** and H. Fujiwara, *Harmonic Analysis on some Exponential Homogeneous Spaces*. Research and Exposition in Math, Volume 25, N 1, 2001 (127-134)
- [13] **A. Baklouti** and H. Hamrouni, *On the Down-Up Representations of Exponential Solvable Lie Groups*. Russ. J. Math. Physics. Volume 8, N 4, 2001 (422-432)
- [14] **A. Baklouti**, A. Ghorbel et H. Hamrouni, *Sur Les Représentations Mixtes Des Groupes de Lie Résolubles Exponentiels*. Publ. Mat. Volume 46, 2002 (179-199)
- [15] **A. Baklouti**, J. Ludwig and K. Smaoui, *Estimate of the  $L^p$ -Fourier transform norm of Nilpotent Lie Groups*. J. Funct. Anal. 199, 2003 (508-520)
- [16] **A. Baklouti** et H. Fujiwara, *Opérateurs Différentiels Associés à Certaines Représentations Unitaires des Groupes de Lie Résolubles Exponentiels*. Compositio. Math. Vol. 139, 2003 (29-65)
- [17] **A. Baklouti** and H. Fujiwara, *Commutativité de l'algèbre des Opérateurs différentiels sur l'espace des représentations restreintes des groupes de Lie nilpotents*. J. Math. Pures. Appl. Volume 83, 2004 (137-161)
- [18] **A. Baklouti**, N. Ben Salah and K. Smaoui, *Some uncertainty principles for nilpotent Lie groups*. Contemporary Mathematics. Volume 363, 2004 (39-52)
- [19] **A. Baklouti**, H. Fujiwara and J. Ludwig: *Analysis of Restrictions of Unitary Representations of a Nilpotent Lie Group*. Bull. Sci. Math. Volume 129, Issue 3, 2005, (187-209)
- [20] **A. Baklouti**, S. Dhieb et D. Manchon: *Déquantification des orbites coadjointes et variétés caractéristiques*. J. Geo. Physics. Volume 54, N 1, 2005 (1-41)
- [21] **A. Baklouti** and F. Khelif: *Proper actions on some exponential solvable homogeneous spaces*. Int. J. Math. Volume 16, N 9, 2005 (941-955)
- [22] **A. Baklouti**: *Dequantization of co-adjoint orbits : Moment Sets and characteristic varie-*

- ties. Contemporary Mathematics. Volume 377, 2005 (79-91).
- [23] **A. Baklouti** and N. Ben Salah: The  $L^p$ - $L^q$ -version of Hardy's Theorem on nilpotent Lie groups. Forum Mathematicum. Volume 18, 2006 (245-262)
- [24] **A. Baklouti**, H. Hamrouni and F. Khlif, *Analysis of some monomial representations of exponential solvable Lie groups*. Russ. J. Math. Physics. Volume 13, N 4, 2006 (363-379)
- [25] **A. Baklouti**, J. Ludwig, L. Scuto and K. Smaoui: Estimate of the  $L^p$ -Fourier Transform Norm on Strong  $*$ -Regular Exponential Solvable Lie Groups. Acta. Math. Sinica. Volume 23, N 8, 2007 (1173-1188)
- [26] **A. Baklouti** and F. Khlif: Weak proper actions on solvable homogeneous spaces. Int. J. Math. Volume 18, N 8, 2007 (903-918)
- [27] **A. Baklouti** and H. Hamrouni: The multiplicity function of mixed representations on Completely solvable Lie groups. Tokyo. J. Math. Volume 30, N 1, 2007 (41-55)
- [28] **A. Baklouti** and K. Tounsi: On the Benson-Ratcliff invariant of coadjoint orbits on nilpotent Lie groups. Osaka. J. Math. Volume 44, 2007 (399-414)
- [29] **A. Baklouti** and N. Ben Salah: On Theorem of Beurling and Cowling-Price for certain nilpotent Lie groups. Bull. Sci. Math. Volume 132, No. 6, 2008 (529-550)
- [30] **A. Baklouti** and E. Kaniuth: On Hardy's uncertainty principle for connected nilpotent Lie groups. Math. Z. Volume 259, No. 2, 2008 (233-247)
- [31] **A. Baklouti**, I. Kédim and T. Yoshino : On the deformation space of Clifford-Klein forms of Heisenberg groups. Int. Math. Res. Not. IMRN (2008), no. 16, 35 pp
- [32] **A. Baklouti** and I. Kédim: On the deformation space of Clifford-Klein forms of some exponential solvable homogeneous spaces. Int. J. Math. Vol 20, Issue 7, 2009 (817-839)
- [33] **A. Baklouti**, J. Ludwig and H. Fujiwara: A variant of Frobenius reciprocity for restricted representations on nilpotent Lie groups. Infinite dimensional harmonic analysis IV. Hackensack, NJ: World Scientific. 13-31 (2009)
- [34] **A. Baklouti**: Deformation of discontinuous subgroups acting on some nilpotent homogeneous spaces. Proc. Japan Acad., 85, Ser. A. No. 4. (2009) 41-45
- [35] **A. Baklouti** and E. Kaniuth : On Hardy's uncertainty principle for solvable locally compact groups. J. Fourier Anal. Appl. 16, No. 1, 129-147 (2010)
- [36] **A. Baklouti** and F. Khlif: Deforming discontinuous subgroups for threadlike homogeneous spaces. Geometria Dedicata. Vol 146, 117-140 (2010)
- [37] **A. Baklouti** and I. Kédim : On non-abelian subgroups acting on exponential solvable homogeneous spaces. Int. Math. Res. Not. 2010, No. 7, 1315-1345 (2010)
- [38] **A. Baklouti** and S. Thangavelu : Variants of Miyachi's Theorem on Nilpotent Lie groups. J. Aust. Math. Soc. 88, No. 1, 1-17 (2010)
- [39] F. Abdelmoula and **A. Baklouti**: The  $L^p$ - $L^q$ -version of Morgan's Theorem for exponential solvable Lie groups. Math. Notes. 88, No. 4, 464-478 (2010)
- [40] **A. Baklouti** and J. Inoue: Estimate of the  $L^p$ -Fourier transform norm for connected nilpotent Lie groups. Adv. Pure. Appl. Math. 2, No. 3-4, 467-483 (2011)
- [41] **A. Baklouti**, S. Dhieb, D. Manchon: A deformation approach of the Kirillov map for exponential groups. Adv. Pure Appl. Math. 2, No. 3-4, 421-436 (2011)
- [42] **A. Baklouti**: On discontinuous subgroups acting on solvable homogeneous spaces, Proc. Jap. Academy, 87, Serial A. 87, No. 9, 173-177 (2011)
- [43] **A. Baklouti**, S. Dhieb and K. Tounsi: When is the deformation space  $T(\mathbb{G}, H_{2n+1}, H)$  a smooth manifold, Int. J. Math. Vol. 22, No. 11 (2011) 1-21
- [44] **A. Baklouti**, F. Khlif and H. Koubaa. On the geometry of stable discontinuous subgroups acting on threadlike homogeneous spaces. Math. Notes, Volume 89, Numbers 5-6, 761-776 (2011)
- [45] **A. Baklouti** and J. Inoue: Estimate of the  $L^p$ -Fourier transform norm for connected nilpotent Lie groups. Adv. Pure Appl. Math. 2, No. 3-4, 467-483 (2011)

- [46] L. Abdelmoula, **A. Baklouti** and I. Kédim: The Selberg-Weil-Kobayashi local rigidity Theorem for exponential Lie groups. *Int. Math. Res. Not.* No. 17, 4062-4084 (2012)
- [47] **A. Baklouti**, N. ElAloui and I. Kédim. A rigidity Theorem and a Stability Theorem for two-step nilpotent Lie groups. *J. Math. Sci. Univ. Tokyo* 19 (2012), 1–27
- [48] **A. Baklouti**: Analogues to some uncertainty principles on certain solvable Lie groups. *Adv. Pure Appl. Math.* 3, No. 3, 265-279 (2012).
- [49] **A. Baklouti** and I. Kédim. On the local rigidity of discontinuous groups for exponential solvable Lie groups. *Adv. Pure. Appl. Maths.* 4, No. 1, 3-20 (2013)
- [50] F. Abdelmoula, **A. Baklouti** and D. Lahyani: The  $L^p$ - $L^q$ -version of Miyachi's Theorem for nilpotent Lie groups and sharpness problems. *Math. Notes.* 94, Issue 1-2, 3-19 (2013)
- [51] **A. Baklouti**, J. Ludwig and H. Fujiwara: La formule de Penney-Plancherel des restrictions à multiplicités finies des groupes de Lie nilpotents. *Adv. Pure Appl. Math.* 4, No. 1, 21-40 (2013)
- [52] **A. Baklouti** and I. Kédim. Open problems in deformation theory of discontinuous groups acting on homogeneous spaces. *Int. J. Open Problems Comput. Math.* , Vol. 6, No. 1, 2013, 115-131
- [53] S. Azouazi, **A. Baklouti** and M. Elloumi: Some uncertainty principles like Miyachi, Cowling-Price and Morgan, on compact extensions of  $\mathbb{R}^n$ . *Indian. J. Pure . App. Maths.* Volume 44, Issue 5, pp 587-604 (2013)
- [54] S. Azouazi, **A. Baklouti** and M. Elloumi: A generalization of Hardy's uncertainty principle on compact extensions of  $\mathbb{R}^n$ . *Annali. Math. Pura. Applicata. Ann. Mat. Pura Appl.* (4) 193 (2014), no. 3, 723–737
- [55] **A. Baklouti** and J. Inoue: Estimate of the  $L^p$ -Fourier transform norm of compact extensions. *Forum. Math.* 26 (2014), no. 2, 621--636
- [56] **A. Baklouti**, J. Ludwig and H. Fujiwara: Intertwining Operators of irreducible representations for Exponential Solvable Lie groups. *Forum. Math.* 27 (2015), no 4, 2231-2257
- [57] **A. Baklouti**, S. Ghaouar, F. Khelif: Deforming discontinuous subgroups of reduced Heisenberg groups. *Kyoto J. Math.* 55 (2015), no. 1, 219–242
- [58] **A. Baklouti**, S. Ghaouar, F. Khelif: On discontinuous groups acting on  $(\mathbb{H}_{2n+1})^r \times (\mathbb{H}_{2n+1})^r / \Delta$ . *Adv. Pure Appl. Math.* 6 (2015), no. 2, 63–79
- [59] A.M. A. Alghamdi, **A. Baklouti**: A Beurling theorem for exponential solvable Lie groups. *J. Lie Theory* 25 (2015), no. 4, 1125–1137
- [60] S. Azaouzi, **A. Baklouti**, S. Ben Ayed: Variants of Müntz-Szász analogs for Euclidean spin groups. *Math. Notes* 98, No. 3, 367-381 (2015)
- [61] **A. Baklouti**, D. Lahyani: Some uncertainty principles for diamond Lie groups. *Adv. Pure Appl. Math.* 6 (2015), no. 4, 199–213
- [62] **A. Baklouti**, N. ElAloui and I. Kédim. The Selberg-Weil-Kobayashi rigidity Theorem. The rank one solvable case. *Int. J. Math*, vol 27. no 10 (2016).1650085, 23 pp
- [63] **A. Baklouti** and S. Bejar. On the Calabi-Markus phenomenon and a rigidity theorem for Euclidean motion groups. *Kyoto. J. Math.* 56, N°2. (2016), 325-346
- [64] **A. Baklouti**: On the  $L^p$ -Fourier transform norm for certain Lie groups. *Analysis, geometry and representations on Lie groups and homogeneous spaces*, 13–22, *Sem. Math. Sci.*, 39, Keio Univ., Yokohama, 2016.
- [65] **A. Baklouti** and S. Bejar. Variants of stability of discontinuous groups for Euclidean motion groups. *Int. J. Math.* 28, No. 6, 26 p. (2017)
- [66] **A. Baklouti**, M. Boussoffara and I. Kedim. Stability of Discontinuous Groups Acting on Homogeneous Spaces. *Mathematical Notes*, (2018), vol. 103, no. 4, pp. 9-22
- [67] **A. Baklouti** and S. Thangavelu: Hardy and Miyachi Theorems for Heisenberg motion

groups. Nagoya. Math. Journal, 229 (2018), 1-20

[68] L. Abdelmoula, **A. Baklouti** and Y. Bouaziz: On the generalized moment separability theorem for type 1 solvable Lie groups. *Adv. Pure. Appl. Math.* 9(4): 247-277 (2018)

[69] **A. Baklouti**, S. Bejar and Ramzi Fendri. A local rigidity Theorem for finite actions on Lie groups and application to compact extensions of  $\mathbb{R}^n$ . *Kyoto J. Math.* 59, No. 3, 607-618 (2019)

[70] **A. Baklouti**, M. Bossofora and I. Kedim: Deformation problems on three-step nilpotent Lie groups. *Hiroshima Math. J.* 49, No. 2, 195-233 (2019)

[71] **A. Baklouti**, H. Fujiwara and J. Ludwig: The polynomial conjecture for restrictions of some nilpotent Lie groups representations. *J. Lie Theory* 29, No. 2, 311-341 (2019)

[72] **A. Baklouti**, H. Fujiwara and J. Ludwig: Monomial representations of discrete type of an exponential solvable Lie group. *Springer Proceedings in Mathematics & Statistics* 290 (2019), 1–55

[73] **A. Baklouti**, S. Ghaouar, F. Khlif : A stability theorem for non-abelian actions on threaddlike homogeneous spaces. *Springer Proc. Math. Stat*, 207(2017), 117–135

[74] **A. Baklouti**, S. Dhieb and D. Manchon: The Poisson characteristic variety of unitary irreducible representations of exponential Lie groups. *Springer Proceedings in Mathematics & Statistics* 290(2019), 207–217

[75] **A. Baklouti**, S. Bejar and K. Dhahri: Deforming discontinuous groups for Heisenberg motion groups. *Int. J. Math.* 30, No. 9, 23 p. (2019)

[76] Azaouzi Salma, **Ali Baklouti** and Mounir Elloumi. A generalized Beurling's Theorem for some Lie groups. *Mathematical Notes.* 107, 42–53 (2020)

[77] **Ali Baklouti** and Junko Inoue: The  $L^p$ -Fourier transform norm on compact extensions of locally compact groups. *Journal of Fourier Analysis and Applications.* 26, 26 (2020)

[78] **Ali Baklouti** and Mahmoud Filali: Beurling's Theorem on locally compact abelian groups. *De Gruyter Proceedings in Mathematics* 2020. To appear

[79] **Ali Baklouti** and Sabria Benayed. Müntz-Szász analogues for compact extensions of Heisenberg groups. *Proc Math Sci* 131, 27 (2021)

[80] **Ali Baklouti** and Atsumu Sasaki. Visible actions and criteria for multiplicity-freeness of representations of Heisenberg groups. *Journal of Lie Theory*

[81] **A. Baklouti**, M. Chaabouni and R. Lahiani: Müntz-Szász theorem for connected nilpotent Lie groups. *J. Ramanujan Math. Soc.* 37, No.3, 287–300 (2022)

[82] **A. Baklouti**, H. Fujiwara and J. Ludwig: A proof of the polynomial conjecture for nilpotent Lie groups monomial representations. *Transactions. American. Math. Soc.* 376, No. 9, 6015-6032 (2023)

[83] S. Adili, **A. Baklouti**, and S. Bejar: Criterion of proper actions of abelian affine discontinuous groups for  $\mathbb{R}^n$ . *Inter. J. Math.* 33, No. 7, Article ID 2250048, 26 p. (2022)

[84] **A. Baklouti**, H. Fujiwara and J. Ludwig: A proof of the polynomial conjecture for nilpotent Lie groups monomial representations. *Transactions of the American Mathematical Society.* 376 (2023), 6015-6032.

[85] **A. Baklouti**, S. Bejar and R. Fendri: A criterion of proper action on some compact extensions of  $\mathbb{R}^n$  and applications. *Inter. J. Math.* Vol. 34, No. 3 (23 pages) DOI: 10.1142/S0129167X23500106 (2023).

[86] **A. Baklouti** and H. Ishi: Open orbits and primitive zero ideals for solvable Lie algebras. *Forum Math.* 36, No. 3, 571-584 (2024).

[87] **A. Baklouti** and H. Fujiwara: A solution to Duflo's polynomial problem for nilpotent Lie groups restricted representations. *Progress in Mathematics.* Birkhäuser Verlag. To appear

[88] **A. Baklouti** and Junko Inoue. Estimate of the  $L^p$  -Fourier transform norm for some Lie groups. *Birkhäuser/Springer, Cham*, [2024]. To appear

[89] **A. Baklouti** and H. Fujiwara: Discrete type restricted representations of exponential

groups and differential operators. Inter. J. Math. To appear

### **Edited Volumes**

I am a main editor of the following books and journal volumes:

- Advances in Pure and Applied Mathematics. Volume 2, Issue 3-4 (Sep 2011). **De gruyter**
- Advances in Pure and Applied Mathematics. Volume 4, Issue 1 (Jan 2013). **De gruyter**
- Advances in Pure and Applied Mathematics. Part I. Proceedings of **TJC 2013**, **De gruyter**
- Advances in Pure and Applied Mathematics. Part II. Proceedings of **TJC 2013**, **De gruyter**
- Analysis and Geometry. MIMS-GGTM, Tunis, March 2014. Springer **PROMS 127** (2015)
- Geometric and Harmonic Analysis on Homogeneous Spaces and Applications I. 2015, Monastir, Tunisia, December 18-23. Springer **PROMS 207**. Berlin: Springer (2017)
- Advances in Pure and Applied Mathematics. Proceedings of the 22nd Meeting of the Tunisian Mathematical Society, Mahdia, 2017. **De Gruyter**
- Advances in Pure and Applied Mathematics. Proceedings of the 23rd Meeting of the Tunisian Mathematical Society, Tabarka, 2018. **De Gruyter**
- Graduate Journal of Mathematics **GJM**. Proceedings of the 24th Congress of the Tunisian Mathematical Society, Sousse, 2019
- Geometric and Harmonic Analysis on Homogeneous Spaces II, Springer **PROMS**, 2019
- Geometric and Harmonic Analysis on Homogeneous Spaces III, Springer **PROMS**, 2021

### **Selected Invited Lectures**

- August 1994 (Moscou, Russia): Participation au Congrès International de Mathématiques à Moscou organisé par l'International Sophus Lie Centre et la Russian Independent University. "On the cortex of two and three steps nilpotent Lie groups"
- October 1995 (Luxembourg): Centre Universitaire de Luxembourg. "Méthode d'orbites et désintégration des représentations unitaires des groupes de Lie nilpotents"
- June 1996 (Metz, France): Colloque Metz-Nancy-Strasbourg. "Sous-groupes de Kazhdan et moyennes invariantes sur la sphère"
- February 1997 (Luxembourg): Centre Universitaire de Luxembourg. "Analyse multirésolution, bases orthonormées et bases de Riesz"
- June 1997 (Poitiers, France): Colloque en l'honneur de Pierre Bernat, Université de Poitiers. "Séparation des représentations unitaires des groupes de Lie nilpotents"
- February 1998 (Paris, France): Paris 7, Jussieu. "Analyse harmonique sur les espaces homogènes exponentiels"
- June 1998 (Leiden, Pays Bas): Leiden University, The Netherlands, ESGT 98/ European School in Group Theory. "Harmonic Analysis for Certain Monomial Representations of an Exponential Solvable Lie Group"
- April 1999 (Las Vegas, U.S.A): Sectional Meeting of the American Mathematical Society, Las Vegas (U.S.A). "Generalized Moment Sets and Unitary Representations of Exponential Solvable Lie Groups"
- April 1999 (Saint-Louis, U.S.A): The Department of Mathematics and Computer Science. The University of Saint Louis at Missouri
- July 2000 (Barcelone, Spain): European Congress of Mathematics: "Differential Operators on the Space of a Unitary Representation of Exponential Lie Groups"
- July 2000 (Vigo, Spain): First Colloquium on Lie Theory and applications: "Harmonic Analysis on Some Exponential Solvable Homogeneous Spaces"
- August 2000 (Odense, Danemark): European School in Group Theory and Plancherel Formula: "The Penney-Fujiwara-Plancherel Formula of Nilpotent Lie Groups "
- October 2001 (Luxembourg): "Estimation de la norme de la transformée de Fourier  $L^p$  sur les groupes résolubles"
- October 2001 (Nancy, France): " Estimation de la norme de la transformée de Fourier  $L^p$

sur les groupes de Lie nilpotents"

- October 2001 (Metz, France): "Commutativité des sous-algèbres dans l'algèbre enveloppante d'un groupe de Lie nilpotent"
- August 2002 (Beijing, China): International Congress of Maths, ICM 2002: "Differential operators on the space of restricted representations on nilpotent Lie groups"
- December 2002 (Clermont Ferrand, France): "Multiplicités des Représentations mixtes des groupes de Lie complètement résolubles"
- February 2003 (Vienna, Austria): International workshop on Idempotent Mathematics and dequantization. "Dequantization of coadjoint orbits: Moment sets and Characteristic varieties"
- August 2003 (Edmonton, Canada): Banach Algebra 2003. "The Cowling-Price Theorem for Nilpotent Lie Groups"
- September 2003 (Munich, Germany): GSF-International workshop on Uncertainty principles. "Some Uncertainty principles on Nilpotent Lie Groups"
- October 2003 (Luxembourg): "Le Théorème de Cowling-Price sur les groupes de Lie Nilpotents"
- December 2003 (Clermont Ferrand, France): "Le Théorème de Cowling-Price sur les groupes de Lie Nilpotents"
- June 2004 (Escorial, Spain): "Some Uncertainty principles and Harmonic Analysis on Nilpotent Lie Groups"
- July 2004 (Istanbul, Turkey): "Differential Operators on the space of a Restricted Representation on Nilpotent Lie groups"
- November 2004 (Awajishima, Japan): "Weak proper actions on exponential homogeneous spaces"
- April 2005 (Munich, Germany): "Some uncertainty principles on NPC nilpotent Lie groups"
- May 2005 (Dijon, France): "Sur les actions propres sur les espaces homogènes nilpotents"
- June 2005 (Kiel, Germany): "Some uncertainty principles on NPC nilpotent Lie groups"
- April 2006 (Paderborn, Germany): "The Cowling-Price Theorem on 2-NPC nilpotent Lie groups"
- July 2006 (Istanbul, Turkey): "Weak proper actions on solvable homogeneous spaces "
- September 2006 (Clermont-Ferrand, France): "Actions faiblement propres sur les espaces homogènes exponentiels"
- December 2006 (Dijon, France): "Actions faiblement propres sur les espaces homogènes résolubles"
- February 2007 (Kyushu, Japan): "Proper and weak proper actions on solvable homogeneous spaces"
- February 2007 (RIMS-Kyoto, Japan): "Some uncertainty principles on nilpotent Lie groups"
- May 2007 (Oujda, Morocco): "Opérateurs d'entrelacement des représentations monomiales des groupes de Lie nilpotents"
- September 2007 (Metz, France): "Harmonic Analysis on monomial representations of a nilpotent Lie groups"
- November 2007 (Dijon, France): "Harmonic Analysis on monomial representations of a nilpotent Lie groups"
- December 2007 (Hong-Kong): "Deformation spaces of an action of discontinuous subgroups on nilpotent homogeneous spaces"
- April 2008 (Paderborn, Germany): "Deforming discontinuous subgroups on homogeneous spaces"
- June 2008 (Escorial, Spain): "On Hardy's Theorem on connected nilpotent Lie group".
- August 2008 (Bangalore, India) (two lectures): "General Uncertainty principles on solvable Lie groups"

- November 2008 (Luminy, Marseille): "The deformation spaces of the action of discontinuous subgroups acting on solvable homogeneous spaces"
- November 2008 (Atami, Japan): "The deformation spaces of the action of discontinuous groups acting on solvable homogeneous spaces"
- February 2009 (Kyushu, Japan): "Rigidity property of deformations on nilpotent Lie groups"
- April 2009 (Kénitra, Morocco): "Description de l'espace de deformation des actions des groupes discontinus"
- July 2009 (Casablanca, Morocco): "Sur certains principes d'incertitude pour les groupes de Lie nilpotents"
- December 2009 (Taiwan): "The Plancherel Theorem of monomial representation of exponential discrete type"
- July 2010 (Oulou, Finland): "On sharpness problems of some uncertainty principles on nilpotent Lie groups"
- June 2011 (Luxembourg): "Estimate of the Fourier transform norm on some Lie groups".
- June 2011 (China): "Some uncertainty principles on certain Lie groups"
- March 2012 (HRI, India): "The representation theory of nilpotent Lie groups". (Four lectures)
- October 2012 (Nice, France): "On the geometry of discontinuous subgroups acting on homogeneous spaces"
- November 2012 (Tokyo): "On the geometry of discontinuous subgroups acting on solvable homogeneous spaces"
- November 2012 (Tokyo): "Some aspects of the deformation theory of discontinuous subgroups of solvable homogeneous spaces"
- January 2013 (Kyushu, Japan): "Harmonic analysis on monomial representations of discrete type of exponential solvable Lie groups"
- April 2013 (Clermont-Ferrand, France): "Sur les representations de type discret des groupes de résolubles exponentiels"
- Mai 2013 (Granada, Spain): "On the  $L^p$ -Fourier transform norm on some Lie groups".
- February 2014 (Tsukuba): "On the Fourier transform on some Lie groups"
- February 2014 (Kyushu, Japan): "On the theory of deformation of discontinuous actions on homogeneous spaces"
- December 2014 (Marrakech, Morocco): "On the  $L^p$ -Fourier transform norm on some Lie groups"
- August 2015 (Halifax, Canada): "On the  $L^p$ -Fourier transform norm on some Lie groups"
- December 2015 (New Delhi): "Estimate of the  $L^p$ -Fourier transform norm on certain Lie groups"
- February 2016 (Tsukuba, Japan): "Some uncertainty principles on certain Lie groups"
- September 2016 (Tsukuba, Japan): "Hardy's theorem on Lie groups"
- January 2017 (Tottori, Japan): "Monomial representations of discrete types for certain exponential Lie groups"
- July 2017 (Oberwolfach, Germany): "On the  $L^p$ -Fourier transform norm for some solvable Lie groups and their compact extensions"
- January 2018 (Bilbao, Spain): "Some uncertainty principales on solvable Lie groups and their compact extensions"
- March 2018 (TEM2018: Ibn Tofail, Kenitra Morocco): "On the  $L^p$ -Fourier Transform on some Lie groups"
- May 2018 (Casablanca, Morocco). Harmonic Analysis and Integral Geometry: "A full generalized version of Hardy's Theorem on nilpotent Lie groups"
- June 2018 (20-23), University of Haute Alsace, Mulhouse, France): Algebra and Lie Theory



Conference. "Monomial representations of discrete type and differential operators"

- September 2018 (Rabat, Morocco). Académie Hassan II des Sciences et Techniques: Mathématiques, Applications et Interactions avec la Physique: Quelques propriétés de la transformée de Fourier sur certains groupes de Lie
- October 2018 (IHES, PARIS-SACLAY): "On the deformation theory of discontinuous groups acting on solvable homogeneous spaces"
- October 2018 (Metz, Université de Lorraine, France): "C'est quoi l'analogue du Théorème de Müntz-Szász pour un groupe de Lie?" Théorie de Lie, Géométrie et Analyse (LieGA)
- October 2018 (Journées  $SL_2(\mathbb{R})$  à Reims): "Does " $ax+b$ " stand for the solvable analogue of  $SL_2(\mathbb{R})$  in deformation theory?"
- October 2018 (Laboratoire de Mathématiques Blaise Pascal, Clermont-Ferrand): "Représentations monomiales des groupes de Lie exponentiels et opérateurs différentiels"
- December 2018 (Graduate School of Mathematical Sciences, University of Tokyo): "Monomial representations of discrete type and differential operators"
- December 2018 (Faculty of Mathematics, Kyushu University, Japan): "Müntz-Szász analogues for some compact extensions of nilpotent Lie groups"
- February 2019 (Graduate School of Mathematics, Nagoya, Japan): "Harmonic analysis on monomial representations of exponential Lie groups and a counterexample to Duflo's Conjecture"
- April 2019 (Marrakech, Morocco, In memory of Ahmad Intissar): "Harmonic analysis around monomial representations of exponential Lie groups"
- April 2019 (American University of Sharjah, UAE. Department of Mathematics and Statistics): "Branching laws of some unitary representations of exponential Lie groups and related differential operators algebras"
- April 2019 (New York University Abu Dhabi, UAE): "Some problems related to Fourier analysis on solvable Lie groups and their compact extensions"
- July 2019 (Winnipeg, Canada): Banach Algebra 2019. "Some uncertainty principles on nilpotent Lie groups (in memory of Eberhard Kaniuth)"
- October 2019 (Errachidia, Morocco): Workshop on Harmonic Analysis and Integral Geometry with Applications. "Sharpness problems related to some uncertainty principles on nilpotent Lie groups"
- July 2020 (Tunis): GTT 1 : Geometry and Topology in Tunisia I. "Est ce que la géométrie des orbites coadjointes serait derrière une preuve de la conjecture polynomiale des restrictions nilpotentes?"
- December 2021 (Hansraj College, India): Online International Conference on Recent Trends in Mathematics. "The  $L^p$ -Fourier transform norm on compact extensions of locally compact groups"
- February 2022 (Indian Institute of Science, Bangalore, India): Analysis and Probability Research Group (APRG): "The  $L^p$ -Fourier transform norm on compact extensions of locally compact groups"
- June 2022 (Reims University, France): Symmetry in Geometry and Analysis (In honor of the 60th birthday of Toshiyuki Kobayashi): "On the polynomial conjecture for restrictions of nilpotent Lie groups representations"
- August 2022 (Université Marien Ngouabi, Brazzaville, Congo): "On polynomial conjectures for nilpotent Lie groups unitary representations"
- September 2022 (Tokyo University, Japan): Geometry, Analysis, and Representation Theory of Lie Groups (by the occasion of the 60th birthday of Toshiyuki Kobayashi): "A Collaboration with Toshiyuki Kobayashi, Fruitful present and Thriving future"
- September 2022 (Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran, Indonesia: Online seminar): "Estimate of the  $L^p$ -Fourier transform norm on certain locally compact groups"

- Novembre 2022 (Univ. du Littoral Côte d'Opale Calais, France): GDR Renormalisation Annual Meeting 2022 (In honor of Dominique Manchon): "Frobenius Exponential Lie algebras and Zariski Closure Conjecture: A longstanding work with Dominique Manchon"
- February 2023 (Public Authority for Applied Education and Training (PAAET), Kuwait): "Switching from commutative to non-commutative harmonic analysis and Lie groups interpretation"
- March 2023 (Tottori University, Japan): "On polynomial Conjectures for nilpotent Lie groups unitary representations"
- March 2023 (RGOSA online seminar: Research Group on Ordered Structures with Applications): "On polynomial Conjectures for nilpotent Lie groups unitary representations" <https://rgosa.net/seminar/season-2022-2023/>
- April 2023 (Euro-Maghreb Conference in Algebra, Geometry and Lie Theory, Sousse, Tunisia): "On polynomial Conjectures for nilpotent Lie groups unitary representations"
- May 2023 (Harmonic Analysis and PDEs: Université Félix Houphouët-Boigny - Abidjan (Côte d'Ivoire)): "The  $L^p$ -Fourier transform norm for some Lie groups" <https://www.gahaa.ci/>
- June 2023 (Research Seminar "Differential geometry and Analysis": Philipps Universität Marburg (Allemagne)): Deformation of Discontinuous groups acting on Homogeneous Spaces. <https://www.mathematik.uni-marburg.de/~agricola/FS.html>
- July 2023 (The 9th SEAMS-UGM 2023 International Conference on Mathematics and Its Applications, Indonesia): "On polynomial Conjectures for nilpotent Lie groups unitary representations" <https://seams-ugm.id/AlgebraMS/>
- July 2023 (Guest Lecture and Research Sharing "Representation Theory of Lie Groups and Its Applications" Universitas Padjadjaran, Bandung, Indonesia): "Representation Theory of Lie Groups and Differential Geometry" <https://fmipa.unpad.ac.id/guest-lecture-and-research-sharing-representation-theory-of-lie-groups-and-its-application/>
- September 2023 (OCAMI workshop: "Representation Theory and Differential Geometry on homogeneous spaces": Osaka Metropolitan University, Japan): "The Zariski Closure Conjecture of coadjoint orbits of exponential solvable groups" <https://sites.google.com/view/tunisian-japanese-conference/home/2023-7th/ocami-workshop>
- November 2023 (7th Tunisian-Japanese Conference: "Geometric and Harmonic Analysis on Homogeneous Space and Applications": Monastir, Tunisia): "On polynomial Conjectures for nilpotent Lie groups unitary representations" <https://sites.google.com/view/tunisian-japanese-conference/home/2023-7th?authuser=0>
- December 2023 (Department of Mathematics, University of Delhi, India): "The  $L^p$ -Fourier transform norm for some Lie groups" <https://maths.du.ac.in/Events/PDF/Baklouti-talk.jpg>
- December 2023 (18th Discussion Meeting in Harmonic Analysis. In honor of the centenary year of Harish Chandra, Department of Mathematics, IIT Guwahati India): "The polynomial Conjecture for monomial representations of discrete type of an exponential solvable Lie group" <https://event.iitg.ac.in/dmha18/>
- January 2024 (International Conference of Mathematics and Applications ICMA2024: Mata Sundri College of Women: University of Delhi, India) "Polynomial conjectures for unitary representations of a nilpotent Lie group" <https://conferences.mscw.ac.in/>
- March 2024 (First International Conference of Harmonic Analysis and Applications, Casablanca, Morocco) "Estimate of the  $L^p$ -Fourier transform norm for compact extensions of locally compact groups" <https://ichahsa-casa.sciencesconf.org/resource/page/id/20>
- May 2024 (Samarkand State University, Department of Mathematics, Uzbekistan) "Harmonic Analysis and Lie groups, an overview on Analysis, Algebra, and Geometry"

- June 2024 (Algebra and Deformations: Université de Haute-Alsace, Mulhouse. In honor of Professor Abdenacer Makhlouf for his 60th birthday) "A proof of the Zariski Closure Conjecture of exponential solvable groups"  
<https://sites.google.com/nyu.edu/algebra-mulhouse-2024/home?authuser=0>
- July 2024 (GTT - Geometry and Topology in Tunisia III, Tunis, Lac II) "Toward the resolution of the Zariski closure conjecture for exponential Lie groups"  
<https://www.mims-institut.org/events/details/226>
- Septembre 2024 (Laboratoire de Mathématiques Blaise Pascal, UMR 660: Clermont-Ferrand, France) "About the Zariski Closure Conjecture for exponential Lie groups"  
[https://lmbp.uca.fr/seminaires/gt\\_gaao.php](https://lmbp.uca.fr/seminaires/gt_gaao.php)

### **Visiting Grants (Selection)**

- 1999: Saint-Louis, Missouri, USA. Department of Mathematics and Computer Sciences. (By Prof. Chal Benson and Gail Ratcliff)
- 2002: University of Kinki, Fukuoka, Japon. Institute of Technology. (By Prof. H. Fujiwara).
- 2002 and 2003: University Blaise Pascal. (By Prof. Dominique Manchon, CNRS-DGRST).
- 2004: RIMS, Kyoto. (By Prof. Toshiyuki Kobayashi)
- 2006: University of Paderborn (Germany). (By Prof. Eberhard Kanuith)
- 2007: University of Kinki, Fukuoka, Japan. Institute of Technology. (By Prof. H. Fujiwara).
- 2007: RIMS, Kyoto. (By Prof. Toshiyuki Kobayashi)
- 2007: Max-Planck Institute. Bonn, (Germany). (By Prof. Bernhard Krötz)
- 2007: University of Luxembourg. (By Prof. Carine Molitor-Braun)
- 2008: University of Paderborn (Germany). (By Prof. Eberhard Kanuith)
- 2008: Indian Institute of Science, Bangalore (India). (By Prof. Sunduram Thangavelu)
- 2008: U. Clermont-Ferrand and U. Bourgogne. (By Prof. D. Manchon and Didier Arnal)
- 2009: University of Kinki, Fukuoka, Japan. Institute of Technology. (By Prof. H. Fujiwara)
- 2010: University of Clermont-Ferrand. University Blaise Pascal. (By Prof. D. Manchon)
- 2011: University of Metz. (By Prof. Jean Ludwig)
- 2011: University of Clermont-Ferrand. University Blaise Pascal. (By Prof. D. Manchon)
- 2011: University of Oulou (Finland). (By Prof. Mahmoud Filali)
- 2012: University of Allahabad. Harish-Chandra Institute. (By Prof. Ratnakumar P. K)
- 2012: University of Tottori. (By Prof. Junko Inoue)
- 2012: University of Metz. (By Prof. Jean Ludwig)
- 2012-2013: JSPS grant. (Fukuoka, Tottori and Tokyo) (By Prof. Hidenori Fujiwara)
- 2013: University of Clermont-Ferrand. University Blaise Pascal. (By Prof. D. Manchon)
- 2015: Universities of Tottori and Nagoya. (By Prof. Junko Inoue and Hideyuki Ishi)
- 2017: University of Metz. (By Prof. Jean Ludwig)
- 2017: University of Tottori and Tsukuba. (By Prof. Junko Inoue and James Cole)
- 2017: University of Tokyo. (By Prof. Toshiyuki Kobayashi)
- 2018: University of Clermont-Ferrand. University Blaise Pascal. (By Prof. D. Manchon)
- 2018: IHES (Institut des Hautes Études Scientifiques, Université Paris-Saclay)
- 2019: Graduate School of Mathematics, Nagoya University. (By Prof. Hideyuki Ishi)
- 2019: IHES and Université Paris-Saclay. (By Prof. Fanny Kassel)
- 2020: University of Lorraine (Metz). (By Prof. Camille Laurent-Gengoux and Jean Ludwig)
- 2022: Osaka Metropolitan University (By Professor Hideyuki Ishi)
- 2023: University of Tottori, Japan. (By Professor Junko Inoue).
- 2023: Osaka Metropolitan University (By Professor Hideyuki Ishi).
- 2024: Laboratoire de Mathématiques Blaise Pascal, UMR 660: Clermont-Ferrand, France (By Professor Dominique Manchon).

### **Organized Conferences and Events (Selection)**

- 2023: Seventh Tunisian-Japanese Conference on Geometric and Harmonic Analysis on homogeneous spaces. (Monastir, Tunisia).  
<https://sites.google.com/view/tunisian-japanese-conference/home/2023-7th?authuser=0>
- 2023: **OCAMI Workshop: Osaka Metropolitan University (Japan)**.  
<https://sites.google.com/view/tunisian-japanese-conference/home/2023-7th/ocami-works-hop>
- 2022: Journées d'Analyse Mathématique et Applications en l'honneur du Pr. Mohamed Sifi (Hammamet, Tunisia). <http://www.ali-b.tn/jama2022-in-honor-of-m-sifi-hammamet-tunisia>
- 2019: Summer school and arithmetic geometry conference, Beit Al-Hikma Carthage (jointly with Ahmed Abbes, IHES, Paris). <http://www.ihes.fr/~abbes/GAC/gac.html>
- 2019: Sixth Tunisian-Japanese Conference on Geometric and Harmonic Analysis on homogeneous spaces and applications (Djerba, Tunisia)  
<https://sites.google.com/view/tunisian-japanese-conference/home/2019-6th>
- 2017: Fifth Tunisian-Japanese Conference on Geometric and Harmonic Analysis on homogeneous spaces. <http://www2.math.kyushu-u.ac.jp/~tnomura/Mahdia/> (Mahdia, Tunisia)
- 2015: Fourth Tunisian-Japanese Conference on Geometric and Harmonic Analysis on homogeneous spaces and applications. (Monastir, Tunisia).  
<http://www2.math.kyushu-u.ac.jp/~tnomura/Monastir/>
- 2013: Third Tunisian-Japanese Conference on Geometric and Harmonic Analysis on homogeneous spaces and applications. (Hammamet, Tunisia).  
<http://www2.math.kyushu-u.ac.jp/~tnomura/HammConf/>
- 2011: Second Tunisian-Japanese Conference on Geometric and Harmonic Analysis on homogeneous spaces and applications. (Sousse, Tunisia).  
<http://www2.math.kyushu-u.ac.jp/~tnomura/SousseConf/>
- 2009: First Tunisian-Japanese Conference on Harmonic Analysis and Geometry. (Kerkennah-Sfax).  
<http://www2.math.kyushu-u.ac.jp/~tnomura/JSPSMHESRT/Kerkennah.html>
- 2006: Co-organizer of the International Conference of harmonic analysis and applications (ICHAA 2006). <http://ichaa.50webs.com/>

## Ph.D. Students

I have been the thesis advisor of twenty-two Ph.D. students, most of whom are now faculty members in Mathematics departments across Tunisia. The students are listed by chronological order (first to latest): **1. Hatem Hamrouni(2003)**, **2. Smaoui Kais(2005)**, **3. Fatma Khlif(2006)**, **4. Nour Ben Salah(2008)**, **5. Fatma Abdelmoula(2012)**, **6. Hanène Koo-bâa(2012)**, **7. Aymen Rahali(2013)**, **8. Salma Azaouzi(2013)**, **9. Hedi Regeiba(2014)**, **10. Warda Ben Salah(2014)**, **11. Nasreddine El Aloui(2014)**, **12. Sonia Ghaouar(2016)**, **13. Souhail Bejar(2016)**, **14. Dhoha Lahyani(2016)**, **15. Samiha Hidri(2016)**, **16. Anis Mes-saoud(2018)**, **17. Mariem Boussoffara(2018)**, **18. Ben Ayed Sabria(2018)**, **19. Ramzi Fendri(2018)**, **20. Khaireddine Dhahri(2020)**, **21. Samir Adili(2022)**, **22. Mohamed Ayadi(2022)** **23. Ibtissem Ben Chenni(2024)**.