

Curriculum Vitae

Boumediene ABDELLAOUI

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1 PERSONAL DATA

Name : Abdellaoui
Givenname : Boumediene
Date and place of Birth : 19/06/1975, Tlemcen-Algeria
Nationality : ALGERIAN
Marital Status : Married
Personal Address : No 11, Cité Bendimered, Sidi Chaker, CP 13000-Tlemcen, ALGERIA
E-Mail : boumediene.abdellaoui@inv.uam.es ; boumediene.abdellaoui@mail.univ-tlemcen.dz ;
boumediene.abdellaoui@gmail.com

2 CURRENT POSITION

Full Professor of mathematical analysis since 2013.
Name and Address of Permanent Institute : Département de Mathématiques, Université Abou Bekr Belkaid, Tlemcen CP 119 13000, Tlemcen ALGERIA
Fax : 0021343216375
Phone : 0021343216375

3 ACADEMIC EDUCATION

- D.E.S. in Mathematics : University of Tlemcen, June 1993-1997, Qualification Très bien.
- Ph.D in Mathematics : Universidad Autonoma de Madrid June 1997-2003, Qualification Sobresaliente(CUM LAUDE)
- university accreditation for permanent position, Ministry of education, Spain .
- Habilitation à diriger les recherches : University Abubekr Belkaid-Tlmeccen, Algeria, May 2008

4 SCIENTIFIC ADMINISTRATION

- 1) Director of the Laboratory "Nonlinear Analysis and applied mathematics", 2013-2020.
<http://lanlma.eb2a.com>.
- 2) Member of Scientific Committee of the faculty of Sciences since 2013.
- 3) Member of Scientific Committee of the mathematic department since 2013.
- 4) The local coordinator (with Prof. Touaoula) of the international master of mathematics (between Algeria, Tunisia, Morocco and France).
- 5) The Algerian coordinator of the Institutional Agreement between the two universities Autonoma university of Madrid and Aboubekr university of Tlemcen.
- 6) The Algerian coordinator of the Institutional Agreement between University of Nancy and the Aboubekr university of Tlemcen.

7) The Algerian coordinator of the Erasmus projet with the Autonoma university of Madrid, Spain. (Since 2017).

5 PRIZES, AWARDS AND OTHER SCIENTIFIC MERITS

- 1) I am a member of the jury for the "Prize Maurice Audin of mathematics since 2018.
- 2) Member of the "Académie des Sciences et des Technologies d'Algérie" (ASTA) since Sept. 2015.
- 3) **Prize Maurice Audin of mathematics 2010**, delivered by the SMF (Société Mathématique de France) and SMAI (Société des Mathématiques Appliquées et Industrielles).
- 4) **Prize of the Shoman Foundation** for Young Arab researchers en mathematics, 2009.
- 5) I was a **junior associate member** at the ICTP of Trieste Italy from 2008 to 2013.
- 6) I am a **regular referee** for some mathematic journals as JFA, JDE, Ann. Inst. H. Poincaré Anal. Non Linéaire, Nonlinear analysis TMA, JMAA, Electronic, CPAA, Boundary value problem, NoDea, DEA, Calc. Var. Partial Differential Equations, Trans. Amer. Math. Soc., Proc. Royal. Soc. Edinburgh, Adv. Nonlinear Stud, Adv. Nonlinear analysis,

6 PUBLICATIONS

6.1 Publications in international refereed journals

- 1) **B. Abdellaoui** and I. Peral : *Some results for semilinear elliptic equations with critical potential*. Journal : Proc. Royal. Soc. Edinburgh. Sect A, Vol 132. 1–24, 2002.
- 2) **B. Abdellaoui** and I. Peral : *Existence and nonexistence results for quasilinear elliptic equations involving the p -Laplacian with critical potential*. Annal. Math. Pura. Appl. V 182, 2003. 247–270.
- 3) **B. Abdellaoui** and I. Peral : *On Quasilinear elliptic equations related to Caffarelli-Kohn-Nirenberg inequalities*. Comm. Pure. Appl. Anal, Vol 2, 2003. pg 539-566.
- 4) **B. Abdellaoui** and I. Peral : *Hölder regularity and Harnack inequality for degenerate parabolic equations related to Caffarelli-Kohn-Nirenberg inequalities*. Nonlinear Anal. T.M.A 57 (2004), no 7-8, 971–1003.
- 5) **B. Abdellaoui** , E. Colorado and I. Peral : *Existence and nonexistence results for a class of linear and semilinear parabolic equations related to Caffarelli-Kohn-Nirenberg inequalities*. J. Euro. Math. Soc, Vol. 6. 2004. 119–149.
- 6) **B. Abdellaoui** , E. Colorado and I. Peral : *Some remarks on elliptic equations with singular potentials*. Adv. Nonlinear Stud. no 4 (2004), 503–533
- 7) **B. Abdellaoui** V. Felli and I. Peral : *Existence and Multiplicity for perturbation of an equation involving Hardy inequality and critical Sobolev exponent in the whole \mathbb{R}^N* . Advanced in Differential equation. (9), 2004, no. 5-6, 481–508.
- 8) **B. Abdellaoui** , E.Colorado and I.Peral : *Some improved Caffarelli-Kohn-Nirenberg inequalities*. Calc. Var. 2004, 23 (2005), 327–345.
- 9) **B. Abdellaoui** V. Felli and I. Peral : *Perturbed elliptic equations of Caffarelli-Kohn-Nirenberg type* . Revista Matematica de la universidad Complutense. 18(2),2005, 339-351.
- 10) **B. Abdellaoui** V. Felli and I. Peral : *Existence and nonexistence results for quasilinear elliptic equations involving the p -laplacian*. Boll. Unione Mat. Ital. Sez. B. (8), (9), 2006, no 2,

445–484.

- 11) **B. Abdellaoui** and I. Peral : *Competition reaction-absorption in some elliptic and parabolic problems related to the Caffarelli-Kohn-Nirenberg inequalities*. J. Math. Anal. Appl. Vol. 314, 2006, no 2, 590–617.
- 12) **B. Abdellaoui**, A. Dall’Aglia and I. Peral : *Elliptic problems with critical growth in the gradient*. J. of diff. equations. 222 (2006), 21–62.
- 13) **B. Abdellaoui** and I. Peral : *A note on a critical problem with natural growth in the gradient*. J. Euro. Math. Soc, Vol.6. 2006. 119–136.
- 14) **B. Abdellaoui** , E. Colorado and I. Peral : *Existence and nonexistence results for a class of parabolic equations with mixed boundary conditions*. Comm. Pure. appl. analysis. 5 (2006), No 1, 29–54.
- 15) **B. Abdellaoui** E. Colorado and I. Peral : *Effect of the boundary conditions in the behavior of the optimal constant of some Caffarelli-Kohn-Nirenberg inequalities. Application to some doubly critical nonlinear elliptic problems* . Adv. Differential Equations 11, 2006, no 6, 667–720.
- 16) **B. Abdellaoui** E. Colorado and M. Sanchón : *Quasilinear problems related with Hardy-Sobolev inequalities*. Adv. Nonlinear Stud. 6, 2006, no 4, 547–562
- 17) **B. Abdellaoui** and I. Peral : *Existence and nonexistence results for quasilinear parabolic equations related to Caffarelli-Kohn-Nirenberg inequalities*. NoDEA Nonlinear Differential Equations Appl. 14 (2007), no. 3-4, 335–360.
- 18) **B. Abdellaoui** and I. Peral : *The Equation $-\Delta u - \lambda \frac{u}{|x|^2} = |\nabla u|^p + cf(x)$, the optimal power*. Ann. Scuola Norm. Sup. Pisa, (5) Vol VI, 2007, 159–183.
- 19) **B. Abdellaoui** , I. Peral, and A. Primo : *Elliptic problems with Hardy potential and Critical Growth In The Gradient : Non-Resonance and blow-up results*. J. Differential Equations 239 (2007) 386–416.
- 20) **B. Abdellaoui** , E. Colorado and I. Peral : *Critical quasilinear elliptic problems with mixed Dirichlet-Neumann boundary conditions : relation with Sobolev and Hardy-Sobolev optimal constants*. J. Math. Anal. Appl. 332 (2007), no. 2, 1165–1188.
- 21) **B. Abdellaoui**, L. Boccardo, I. Peral and A. Primo : *Quasilinear elliptic equations with natural growth*. Differential and Integral Equations, 20, (2007), 9, 1005–1020.
- 22) **B. Abdellaoui**, I. Peral, and A. Primo : *Some remarks on non-resonance for elliptic equations with gradient term*. Ann. Inst. H. Poincaré Anal. Non Linéaire 25 (2008), no. 5, 969–985.
- 23) **B. Abdellaoui** : *Multiplicity result for quasilinear elliptic problems with general growth in the gradient*. Adv. Nonlinear Stud. 8 (2008), no. 2, 289–301.
- 24) **B. Abdellaoui**, A. Dall’Aglia and I. Peral : *Regularity and nonuniqueness results for parabolic problems arising in some physical models having natural growth in the gradient*. J. Math. Pures Appl. (9) 90 (2008), no. 3, 242–269.
- 25) **B. Abdellaoui**, A. Dall’Aglia and I. Peral : *Corrigendum to some remarks on elliptic problems with critical growth in the gradient*”. J. Differential Equations 246 (2009), no. 7, 2988–2990.
- 26) **B. Abdellaoui**, V. Felli and I. Peral : *Some remarks on systems of elliptic equations doubly critical in the whole \mathbb{R}^N* . Calc. Var. Partial Differential Equations 34 (2009), no. 1, 97–137
- 27) **B. Abdellaoui**, I. Peral, and A. Primo : *Influence of the Hardy potential in a semilinear heat equation*. Proc. Royal. Soc. Edinburgh. Sect A, No. 139, 2009. pp. 897–926 .
- 28) **B. Abdellaoui**, A. Primo and T. Touaoula : *Existence, nonexistence and multiplicity results for semilinear elliptic problems with measure data and absorption-reaction term* . Differ. Equ. Appl. 1 (2009), no. 2, 253–284.
- 29) **B. Abdellaoui**, I. Peral, and A. Primo : *Strong regularizing effect of a gradient term in the heat equation with the Hardy potential*. J. Funct. Anal. 258 (2010), no. 4, 1247–1272.

- 30) **B. Abdellaoui** and T. Touaoula : *Decay solution for the renewal equation with diffusion*. NoDEA Nonlinear Differential Equations Appl. 17 (2010), no. 3, 271–288.
- 31) **B. Abdellaoui**, I. Peral and A. Primo : *Optimal results for parabolic problems arising in some physical models with critical growth in the gradient respect to a Hardy potential*. Adv. Math. 225 (2010), no. 6, 2967–3021.
- 32) **B. Abdellaoui**, D. Giachetti, I. Peral and M. Walias : *Non-linear elliptic problems with dependence on the gradient and singular on the boundary*. Nonlinear Anal. 74 (2011), no. 4, 1355–1371.
- 33) **B. Abdellaoui** and S.M. Bouguima : *An obstacle problems with gradient term* . Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei (9) Mat. Appl. 22 (2011), no. 1, 29–50,
- 34) **B. Abdellaoui** , A. Dall'Aglio, I. Peral and S. Segura : *Global existence for nonlinear parabolic problems with measure data, application to nonuniqueness for parabolic problems with critical gradient term* . Advanced Nonlinear Studies 11 (2011), 733–780.
- 35) **B. Abdellaoui** , Y. Nasri and A. Primo : *Strong comparison results for quasilinear elliptic equation with gradient term* . Mediterr. J. Math. 10(2013), no. 1, 289–311.
- 36) **B. Abdellaoui** and A. Attar : *Quasilinear elliptic problems with Hardy Potential and singular nonlinearities*. Commun. Pure Appl. Anal. 12 (2013), no. 3, 1363–1380.
- 37) **B. Abdellaoui** , I. Peral and M. Walias : *Multiplicity result for porous media and fast diffusion equations with gradient term* . Contemporary Mathematics, no. 594, 2013. 37–59.
- 38) **B. Abdellaoui** , A. Attar and S.E. Miri : *Nonlinear Elliptic problems with gradient term and singular nonlinearities* . J. Math. Anal. App. 409, 2014, no. 1, 362–377
- 39) **B. Abdellaoui** , D. Giachetti, I. Peral and M. Walias : *Elliptic problems with nonlinear terms depending on the gradient and singular on the boundary : Interaction with Hardy-Leray potential* . Discrete and Continue Dynamical System-A 34, No.5, 2014, 1747–1774.
- 40) **B. Abdellaoui** and M.T. Touaoula : *Global attractivity for nonlinear differential equation with a nonlocal term*. Electronic Journal of Differential Equations, Vol. 2014 (2014), No. 177, pp. 1–13.
- 41) **B. Abdellaoui** , I. Peral and A. Primo : *A remark on the fractional Hardy inequality with a remainder term* . C. R. Acad. Sci. Paris 352 (2014), no. 4, 299–303.
- 42) **B. Abdellaoui** , S.E. Miri, M.T. Touaoula and I. Peral : *quasilinear parabolic problems with singular potential and reaction term*. Nonlinear Differ. Equ. Appl. 21 (2014), 453–490.
- 43) **B. Abdellaoui** , A. Attar, S. Merchán and I. Peral : *Effect of a gradient term on the solvability of the heat equation with a supercritical reaction with respect to the Hardy potential*. Advanced Nonlinear Studies 14 (2014), 547–564.
- 44) **B. Abdellaoui**, I. Peral and M. Walias : *Porous media and fast diffusion equations with gradient term*. Trans. Amer. Math. Soc. 367 (2015), no. 7, 4757–4791.
- 45) **B. Abdellaoui** , K. Biroud, J. Davila and F. Mahmoudi : *Nonlinear elliptic problem related to the Hardy inequality with singular term*. Communications in Contemporary Mathematics 17 (2015), no. 3, (28 pages).
- 46) **B. Abdellaoui** and F. Mahmoudi : *An improved Hardy inequality for a nonlocal operator*. Discrete and continuous dynamical systems. Volume 36, Number 3, March 2016
- 47) **B. Abdellaoui** , K. Biroud and A. Primo : *A semilinear parabolic problem with singular term at the boundary*. J. Evol. Equ. Vol. 16, Issue 1 (2016), pp 131-153
- 48) **B. Abdellaoui** , M. Medina, I. Peral and A. Primo : *The effect of the Hardy potential in some Calderón-Zygmund properties for the fractional Laplacian*. J. Differential Equations, 260 (2016) 8160-8206.
- 49) **B. Abdellaoui** , M. Medina, I. Peral and A. Primo : *Optimal results for the fractional*

- heat equation involving the Hardy potential*. Nonlinear Anal. TMA. Vol. 140, 2016, 166–207.
- 50) **B. Abdellaoui** , A. Attar and R. Bentifour : *On the Fractional p -laplacian equations with weight and general datum*. Advances in Nonlinear Analysis. Published Online : 2016-12-02. DOI : <https://doi.org/10.1515/anona-2016-0072>
- 51) **B. Abdellaoui** , J.A. Aguilar, B. Barrios, E. Colorado, F. Charro, J. García Azorero, M. Medina, S. Merchán, L. Montoro, A. Ana : *Ireneo Peral : forty years as mentor*. Adv. Nonlinear Stud. 17, 2017, no. 2, 217-243.
- 52) **B. Abdellaoui** and R. Bentifour : *Caffarelli-Kohn-Nirenberg type inequalities of fractional order with applications*. Journal of Functional analysis 272, No 10, 2017, 3998-4029.
- 53) **B. Abdellaoui** , A. Dall’aglio and S. Segura : *Multiplicity of solutions to elliptic problems involving the 1-Laplacian with critical gradient term*. Adv. Nonlinear Stud. 17, 2017, No. 2, 333-353.
- 54) **B. Abdellaoui** , A. Boucherif and M.T. Touaoula : *Fractional parabolic problems with a nonlocal initial condition*. Moroccan Journal of Pure and Appl. Anal. (MJPA), Volume 3(1), 2017, 116-132.
- 55) **B. Abdellaoui** , A. Dieb and E. Valdinoci : *A nonlocal concave-convex problem with nonlocal mixed boundary data*. Communication on pure and Applied analysis, 17, No 3, 2018, 1103-1120.
- 56) **B. Abdellaoui** , A. Attar, R. Bentifour and I. Peral : *On the Fractional p -laplacian parabolic equations with general datum* . Ann. Mat. Pura Appl. (4) 197, 2018, No. 2, 329-356.
- 57) **B. Abdellaoui** and I. Peral : *Towards a deterministic KPZ equation with fractional diffusion : the stationary problem*. Nonlinearity 31, 2018, 1260-1298.
- 58) **B. Abdellaoui** , A. Attar, D. Abdelrazek , I. Peral : *Attainability o the fractional Hardy constant with nonlocal mixed boundary conditions : applications*. Discrete and Continuous Dynamical Systems Volume 38, Number 12, 2018.
- 59) **B. Abdellaoui** , A. Attar, R. Bentifour and I. Peral : *On a fractional quasilinear parabolic problem : the influence of the Hardy potential*. Nonlinear Differ. Equ. Appl. 25, 30 (2018). <https://doi.org/10.1007/s00030-018-0521-y>.
- 60) **B. Abdellaoui** , K. Biroud and A. Primo : *Nonlinear fractional elliptic problem with singular term at the boundary*. Complex Variables and Elliptic Equations. Volume 64, Issue 6 (2019). pp. 909-932.
- 61) **B. Abdellaoui** , A. Attar and E.H. Laamri : *On the existence of positive solutions to semilinear elliptic systems involving gradient term*. Appl. Anal. 98 (2019), no. 7, 1289-1306. DOI : <https://doi.org/10.1080/00036811.2017.1419204>
- 62) **B. Abdellaoui**, D. Abdelrazek and F. Mahmoudi : *On the fractional Lazer-McKenna conjecture with superlinear potential* . Calc. Var. (2019) 36 pages, 58 :7<https://doi.org/10.1007/s00526-018-1444-5>.
- 63) **B. Abdellaoui**, A. J. Fernandez : *Fractional elliptic problem with non local gradient : regularity and existence results*. Proc. Royal Soc. Edinburgh Sect. A, 150 (2020), 2682-2718. DOI :10.1017/prm.2019.60.
- 64) **B. Abdellaoui** , A. Primo, I. Peral : *Fujita type exponent for Fractional parabolic equation with Hardy potential*. 2020, Volume 2, Issue 4 : 639-656. doi : 10.3934/mine.2020029.
- 65) **B. Abdellaoui** , A. Primo, I. Peral, F. Soria : *Fractional elliptic problems with gradient term and Hardy potential : existence and non existence of a solution*. Nonlinear Analysis 201 (2020) article 111942, pp. 1-29.
- 66) **B. Abdellaoui** , A. Attar, R. Bentifour, El-Haj Laamri : *Nonlinear parabolic system involving potential term and nonlinear gradient term* . Mediterr. J. Math. 17 (2020), no. 4, Art.

119, 30 pp.

67) **B. Abdellaoui** , P. Ochoa, I. Peral : *A note on quasilinear equations with fractional diffusion*. Mathematics in Engineering Volume 3 (2021), no. 2, Paper No. 018, 28 pages. doi : 10.3934/mine.2021018.

68) **B. Abdellaoui** , K. Biroud and E.H. Laamri : *Existence and non existence of positive solutions to a fractional parabolic problem with singular weight at the boundary*. . J. Evol. Equ. 21 (2021), no. 2, 1227-1261. Doi.org/10.1007/s00028-020-00623-9

69) **B. Abdellaoui** , A. Attar, O.Y. Boukarabila, E.H. Laamri : *Existence and multiplicity for a nonlocal doubly critical problem involving Hardy potential in the whole space*. Complex Variables and Elliptic Equations 2021. 33 pages.

70) **B. Abdellaoui** , A. Primo, I. Peral, F. Soria : *General KPZ equation with nonlocal diffusion : existence and regularity*. Journal of Differential Equations Volume 312, 5 March 2022, Pages 65-147.

71) **B. Abdellaoui** , K. Biroud, A. Primo, F. Soria, A. Younes : *Fractional KPZ equations with fractional gradient term and Hardy potential*. Mathematics in Engineering, 5(2) : 1-36. 2022.

72) **B. Abdellaoui** , A.J. Fernández, T. Leonori, A. Younes : *Deterministic KPZ equations with nonlocal "gradient terms"*, To appear in Annali di Matematica Pura ed Applicata. <https://doi.org/10.1007/s10231-022-01288-6> (2022), <https://arxiv.org/abs/2203.11616>.

73) **B. Abdellaoui** , Ould M. M. Ghoulam, A. Youssfi *Fractional heat equation with singular nonlinearity*, J. Pseudo-Differ. Oper. Appl. (2022) 13 :50 <https://doi.org/10.1007/s11868-022-00484-5>.

74) **B. Abdellaoui** , K. Biroud, F. Mahmoudi, A. Younes, *Fractional KPZ system with nonlocal "gradient terms"*, DCDS A. 23 pages, (2023).

6.2 Publications in Conference Proceeding

1) **B. Abdellaoui** , A. Boucherif and M.T. Touaoula : *Nonlocal initial conditions for fractional diffusion problems*. AIP Conference Proceedings 1830, 020031 (2017) ; doi : 10.1063/1.4980894.

6.3 Prepublications

1) **B. Abdellaoui** , A.J. Fernández, T. Leonori, A. Younes : *Global fractional Calderón-Zygmund regularity*, Submitted (2021), <https://arxiv.org/abs/2107.06535>.

2) **B. Abdellaoui** , S. Atmani, K. Biroud and E.H. Laamri : *Global regularity for the fractional heat equation : Application to the KPZ equation with non local gradient term*, Submitted(2022).

3) **B. Abdellaoui** , A. Azzous, A. Bensedik : *Fractional Kirchhoff problem with Hardy potential : Breaking of resonance*, Submitted(2022) (<https://arxiv.org/abs/1811.09268>).

4) **B. Abdellaoui** , S. Boukarabila and E.H. Laamri : *Existence and non existence of a global solution to KPZ problem with local gradient term*. Submitted(2023).

5) **B. Abdellaoui** , A. Primo, G. Siclari : *Fujita exponent for a classe of nonlocal parabolic problem with Hardy potential*. Submitted(2023).

6.4 Works in preparation

1) **B. Abdellaoui** , S. Atmani, K. Biroud and E.-H Laamri : *Existence results for reaction-diffusion systems with fractional diffusion and local gradient term*. In preparation.

- 2) **B. Abdellaoui** , E.-H Laamri, S. E. Miri : *Anisotropic reaction-diffusion systems*. In preparation.
- 3) **B. Abdellaoui** , A. Attar, F. Bengrine : *Non existence result for an elliptic system with Hardy potential : the critical curves*.. In preparation.
- 4) **B. Abdellaoui** , A. Attar, F. Bengrine, A. Primo : *Existence and non existence result for a cooperative elliptic system with singular term*.. In preparation.

7 PARTICIPATION IN CONGRESS- WORKSHOP : COMMUNICATIONS

7.1 Invited as main Speaker

- 1) The Alhambra 2000 conference in Mathematics, Granada (Spain) 03/07-07/07-2000.
- 2) Spring school on Variational Problems in Nonlinear Analysis, SISSA Italy from 26/04/2005 to 13/05/2005 under the direction of Professor Antonio Ambrosetti.
- 3) El XIX Congreso de Ecuaciones diferenciales y Aplicaciones. Madrid- Spain 19-23 Sept. 2005.
- 4) Recent Trends in Nonlinear Partial Differential Equations? on the Occasion of the Ireneo Peral's 60 birthday. Universidad de Salamanca Feb. 12-15 2007.
- 5) Primer Encuentro de la red de ecuaciones parabolicas y elipticas No Lineales. Almeria 17-19 Sept. 2007.
- 6) Premières journées scientifiques du laboratpaires Euro-Maghrébin de mathématiques et leurs interactions. Tipaza, Algérie 13-22 jun 2010.
- 7) Sixième Ecole sur les Equations Différentielles Abstraites. Oum El Bouaghi, Algeria, April 17-21, 2011.
- 8) Congrès des Mathématiciens Algériens, CMA2012, 7-8 Mars, Annaba, Algeria.
- 9) Congrès International du Laboratoire Euro-Maghrébin de Mathématiques et de leurs Interactions Rabat, Morocco, 13-15 February 2013.
- 10) Tendances dans les Applications Mathématiques en Tunisie, Algérie, Maroc(TAMTAM XIII) Alger, Algérie 27/04/2013-30/04/2013
- 11) Conférence franco-algérienne EDP et Applications, Poitiers, France du 16-19 Juin 2014.
- 12) 9th Euro-Maghrebian Workshop on Evolution equation, Marrakesh, Morocco 22/09/2014 to 26/09/2014.
- 13) Summer Partial Differential Equations Day, Madrid, 25 Jun 2015.
- 14) New trends on Partial Differential Equations "Un homenaje a Ireneo Peral", Granada, Spain May 24-26 2017.
- 15) Differential Equations : Theory, Methods and Applications - DETMA 2018, Setif, Algeria, 9-10 April, 2018.
- 16) Premier Congrès Franco-Marocain de Mathématiques Appliquées, Marrakesh, Morocco 16/04/2018 to 20/04/2018.
- 17) Workshop on differential equations and dynamical systems (CIMPA), Bejaia-Algeria 10-14 March 2019.
- 18) Ecole de Mathématique Africaine (CIMPA), Kénitra, Morocco, 14-20 April 2019.
- 19) Onzième Rencontre d'Analyse Mathématique et Applications : RAMA11, Sidi Bel Abbes 21-24 novembre 2019.
- 20) The regular seminar of the l'Institut Elie Cartan, University of Nancy, France, 14 Dec. 2021.
- 21) The regular seminar of the departement de Mathematiques, universite de Sidi BelAbes, Juin 2022 et 2023.

22) The regular seminar of the department of Mathematics, University Autonoma of Madrid, Spain, Jun. 2022.

23) Main conference "Mathématiques et Société", Algerian academy of science and technologies, Tlemcen, Algeria, Nov. 2022.

24) Main conference "An International Conference on nonlinear Elliptic and Parabolic PDE", University Autonoma of Madrid, 13th-16th June, 2023.

25) Main conference "The International Conference on Recent Advances in PDEs and Applications", the Faculty of Sciences Ain Chock Casablanca 27-28, July, 2023.

7.2 Conferences and poster Presentations

1) The International School of nonlinear Analysis and Application to Partial Differential Equations, The I. C. T. P de Trieste (ITALIE), oct. 12-31, 1998.

2) The Workshop and Conference on Recent Trends in Nonlinear Variational Problems, The I. C. T. P of Trieste (ITALY), April, 22, may, 08-22, 2003.

3) Recent Trends in Partial Differential Equations, Santander, Spain, 2004

4) International Symposium on Variational Methods and Nonlinear Differential Equations on the occasion of the Antonio Ambrosetti's 60 Birthday, Universita Roma 3, Jan. 10-14, 2005.

5) The International congress of mathematicians, Madrid 22-30 August 2006.

6) Nonlinear Diffusion : Mathematics and Applications, on the occasion of the Juan Luis Vazquez's 60 birthday, El Escorial (Spain), June 26-29, 2007.

7) Ecole CIMPA, Tlemcen 10-22 May 2008.

8) The regular Seminar of Mathematic at the ICTP center of Trieste, Italy, 29 March 2012

9) The regular seminar of Mathematic at École Normale Supérieure Kouba, Alger, Algeria. Mini course + conference. May 2012.

10) The regular seminar of Mathematic at CMM - Center for Mathematical Modeling - Universidad de Chile, 20/11/2012 and 24/08/2016.

11) Ecole CIMPA : Contrôle géométrique et stochastique des équations aux dérivées partielles, Tlemcen, Algeria 12-23 avril 2014.

12) Le Congrès des Mathématiciens Algériens, Tlemcen, Algeria, 11-13 mai 2014

8 GRANTS AND FINANCED INVESTIGATION PROJECTS

8.1 GRANTS

1) Grant from AECI (Spain Foreign Affairs Ministry) from 1997 to 2001 to prepare a PH.D in mathematics at Autonoma university of Madrid.

2) Grant from UNESCO to participate at The Alhalambra 2000 conference in Mathematics, Granada, Spain 2000.

3) Grant from ICTP of Italy to participate at The International School of nonlinear Analysis and Application to Partial Differential Equations. October. 12-31, 1998.

4) Grant from ICTP from 2008-2015, Junior Associate member.

- 5) Grant form Battuta project (Academic Staff) for 1 month 01/12/2015-31/12/2015.
- 6) Visiting professor for one month, university of Lorraine, France. February 2017.
- 7) Visiting professor for one month, university of Besançon, France. March 2018.
- 8) Grant from Eramsmus project (Academic Staff), university Autonoma of Madrid, from 12/12/2018-28/12/2018.
- 9) Visiting professor for two months, university of Lorraine, France. Jun-July 2019.
- 10) Grant from Eramsmus project (Academic Staff), university Autonoma of Madrid, from 29/02/2020-14/03/2020.
- 10) Visiting professor for one month, university of Lorraine, France. Dec. 2021.
- 11) Grant from Eramsmus project (Academic Staff), university Autonoma of Madrid, from 01/03/2023-14/03/2023.

8.2 RESEARCH PROJECTS

- 1) Title of project : Nonlinear evolution problems and its stationary states
 Financed by : The ministry of Science and technology-Spain (BFM2001-0183)
 Duration : 2001-2004
 Director of Project : Prof. Ireneo Peral Alonso.
 Type of participation : researcher.
- 2) Title of project : Critical problems in nonlinear Evolution Equation : Application to Critical elliptic problems.
 Financed by : The ministry of Science and technology-Spain (MTM2004-02223)
 Duration : 2004-2009
 Director of project : Prof. Ireneo Peral Alonso.
 Type of participation : researcher.
- 3) Title of project : Résolution et étude qualitative des problèmes issus de la modélisation en dynamique des populations (Projet CNEPRU).
 Financed by : Ministère de l'enseignement supérieur et de la recherche scientifique, Algeria
 Duration : 2007-2010
 Director of project : Prof.. Ghouali Noureddine.
 Type of participation : researcher.
- 4) Title of project : Elliptic and parabolic problems with critical comportement : Applications to Hardy type inequalities.
 Financed by : Spain Foreign Affairs Ministry (MTM2004-02223) AECI (A/817/07) Duration : 2007-2009
 Directors of projet : Dr. B. Abdellaoui and Prof. Ireneo Peral Alonso.
 Type of participation : Director.
- 5) Title of project : Nonlinear Parabolic equations and application : asymptotic behavior and stationary stats.
 Financed by : Spain Foreign Affairs Ministry (MTM2004-02223) AECI (A/817/07)
 Duration : 2009-2011
 Directors of projet : Dr. B. Abdellaoui and Prof. Ireneo Peral Alonso.
 Type of participation : Director

6) Title of project : Etude asymptotique du développement de populations de cellules tumorales. (Projet CNEPRU). Financed by : Ministère de l'enseignement supérieur et de la recherche scientifique, Algeria Duration : 2010-2013 Director of project : Prof.. Ghouali Nouredine . Type of participation : researcher.

7) Title of project : PNR-Contrôle du développement des cellules tumorales. Financed by : Ministère de l'enseignement supérieur et de la recherche scientifique, Algeria (8/U13/1063) Duration : 2011-2013 Directors of project : Pr. T.M. Touaoula Type of participation : Main researcher

8) Title of project : Problèmes Elliptiques et Paraboliques Non linéaires et applications en systèmes dynamiques : Comportement asymptotique et états stationnaires. (Projet CNEPRU). Financed by : Ministère de l'enseignement supérieur et de la recherche scientifique, Algeria Duration : 2016-2020 Director of project : Prof. B. Abdellaoui Type of participation : Director.

9) Title of project : Problèmes elliptiques et paraboliques non linéaires sous la présence d'un operateur non local. (Projet PRFU). Financed by : Ministère de l'enseignement supérieur et de la recherche scientifique, Algeria Duration : 2020-2024 Director of project : Prof. B. Abdellaoui Type of participation : Director.

10) Title of project : Ecuaciones con perturbaciones de potencias del Laplaciano. EPPLA Financed by : The ministry of Science and technology-Spain (PID2019-110712GB-I00) Duration : 2019-2023 Director of Project : Profs. Ana Primo and Fernando Soria. Type of participation : main researcher.

9 DIRECTION OF THESIS AND OTHER SCIENTIFIC ACTIVITIES

9.1 Master and Magister thesis :

- 1) A. Attar : Inégalité de Hardy-Sobolev améliorée et application à l'étude d'un problème elliptique non linéaire. Master thesis, 2008.
- 2) S. Benali : La La symétrisation de Schwaz et quelques applications. Master thesis, 2009.
- 3) A. Benguissoum : Equations elliptiques quasilineaires avec données dans L^1 . Magister thesis, 2010.
- 4) H. Makni : Principe de Concentration-compacité et Applications. Master thesis, 2011.
- 5) Y. O. Boukarabila : Quelques E.D.P elliptiques avec données dans L^1 . Master thesis, 2012.
- 6) R. Taleb Bendiab : Résolution d'une E.D.P elliptique avec une dépendance en gradient, Master thesis, 2012.

- 7) M. Mohammadi : Degré topologique et applications, Master thesis, 2013.
- 8) Y.A. Menacer : Système non linéaire issue d'un modèle biologique existence et comportements asymptotique, master thesis 2016.
- 9) S. Boukarabila : Systèmes de réaction-diffusion fractionnaires et applications, master thesis 2019.
- 10) F.Z. Bengrine : Méthode de réduction et application à la résolution des problèmes elliptiques non linéaires, master thesis 2020.

9.2 Doctoral Thesis

- 1) S.E.Miri : Problèmes elliptiques et paraboliques avec singularités, 21/10/2012, Université Abou Bekr Belkaid, Tlemcen. Mention Très honorable.
Actual position : Full professor at the university of Tlemcen.
- 2) A. Attar : Problèmes elliptiques et paraboliques non-linéaires avec dépendance du gradient et potentiel de Hardy singulier. 30/05/2013, Université Abou Bekr Belkaid, Tlemcen. Mention Très honorable.
Actual position : Permanent professor at the university of Tlemcen (Maître de conférences A).
- 3) K. Biroud : Sur une classe de problèmes elliptiques et paraboliques non-linéaires avec potentiel singulier sur le bord. 22/11/2014, Université Abou Bekr Belkaid, Tlemcen. Mention Très honorable.
Actual position : Regular professor at "Ecole Supérieure en Sciences Economiques, Commerciales et sciences de Gestion", Tlemcen (Maître de conférences A).
- 4) R. Bentifour : Problèmes elliptiques et paraboliques fractionnaires avec données générales. 15/03/2017, Université Abou Bekr Belkaid, Tlemcen. Mention Très honorable.
Actual position : Regular professor at the university of Tlemcen (Maître de conférences A).
- 5) A. Dieb : Sur une classe de problèmes elliptiques non locaux et non-linéaires avec terme singulier. 15/12/2019, Université Abou Bekr Belkaid, Tlemcen. Mention Très honorable.
Actual position : Associate professor at the university of Tiharet.
- 5) A. Younes : Problèmes elliptiques non linéaires en relation avec le Laplacien fractionnaire : existence et régularité. 04/07/2023, Université Abou Bekr Belkaid, Tlemcen. Mention Très honorable.

9.3 Doctoral Thesis in period of preparation

- 1) S. Atmani : Sur quelques modèles de réaction diffusion avec un opérateur non local. **Co-direction with Prof. Laamri, university of Nancy.**
- 2) S. Boukarabila : Problèmes paraboliques non linéaire avec diffusion fractionnaire et sous l'existence d'un gradient non local. **Co-direction with Prof. Laamri, university of Nancy.**
- 3) F. Bengrine : Problèmes elliptiques non linéaires en relation avec le Laplacien fractionnaire. **Co-direction with Prof. Ana Primo, university Autonoma of Madrid-Spain.**

9.4 Membership of Scientific Committee :

- 1) Congrès des Mathématiciens Algériens, CMA2012, 7-8 Mars, Annaba, Algeria.
- 2) Rencontre d'Analyse Mathématique et ses Applications, RAMA8, 26-29 Novembre 2012. Tipaza, Algeria.
- 3) Sixieme colloque sur les Tendances dans les applications Mathématiques en Tunisie, Algérie, Maroc. TAMTAM, 27-30 Avril 2013.
- 4) Congrès des Mathématiciens Algériens, CMA 2014, 7-8 Mars, Tlemcen, Algeria. 5- International Conference on Mathematics for the Natural and Life Sciences, ICMNLS 2014, Tlemcen, 9-11 Novembre 2014.
- 5) International Conference on Mathematics for the Natural and Life Sciences, ICMNLS 2014, Tlemcen, 9-11 Novembre 2014.
- 6) The main organizer of "Deuxième Workshop Algéro-Français EDP et Applications", Tlemcen University, from 30 April to 03 Mach 2017.
<https://2workshop-edp-tlemcen-2017.weebly.com/>
- 7) The main organizer of "Local, Nonlocal problems and differential inclusions", Tlemcen University, 24-25 April 2018.
<https://journées-a-boucherif-tlemcen-2018.weebly.com/>
- 8) member of the Scientific Committee of "TAMTAM : Tendances dans les Applications Mathématiques en Tunisie Algérie Maroc", Tlemcen University, 23-27 February 2019.
<https://tamtam2019-univ-tlemcen.weebly.com/actualiteacutes.html>
- 9) member of the Scientific Committee of "Trends in PDE's and related fields", 08-10 April 2019, Sidi Bel Abbès, Algeria".
<http://conf-sidi-bel-abbes.ur-acedp.org/>
- 10) member of the Scientific Committee of "Onzième Rencontre d'Analyse Mathématique et Applications : RAMA11, Sidi Bel Abbes 21-24 novembre 2019, Algeria.
<https://fse.univ-sba.dz/rama11/conferenciers/>
- 11) I am the main coordinator of the Erasmus project with the Autonomous University of Madrid.
- 12) I am the Algerian principal investigator of the project with the department of mathematics institut Elie cartan univesty of Nancy (in collaboration with professor Laamri.)
- 12) I am the Algerian coordinator with Prof. Touaoula of the joint master (in Mathematics) between university AbouBekr Belkaid Tlemcen and University of Nice.

10 PROFESSIONAL EXPERIENCE AND ACADEMIC POSITIONS

10.1 SCIENTIFIC EMPLOYMENT AND ACADEMIC RESPONSIBILITIES

- **Universidad Autonoma de Madrid**

2001 - 2003 : Teaching Assistant (ayudante).

2003 - 2006 : Associate professor (ayudante doctor).

- **Université Abou Bekr Belkaid de Tlemcen (Algeria)**

2006 - 2008 : Associate professor.

2008 - 2013 : Permanent professor (Maître de conférences classe A).

2013- : Full professor of mathematic analysis.

10.2 Teaching experience at University Autonoma of Madrid

Jan. 2001 - Sept 2003 Course and practical of mathematics analysis II.

Sept 2003 - Sept 2005 Course and practical of Geometry I.

Feb. 2006 - Sept 2006

- 1) Course of Mathematics for environments (probability and dynamics systems Applications);
- 2) Course and practical of linear algebra II for physics.

10.3 Teaching experience at University Abubekr Belkaid-Tlemcen

Sept 2006- June 2009 Course and practical of :

- 1) Fourier analysis and applications (Third year of licence of mathematics);
- 2) Signal processing and applications;
- 3) Practical of analysis I.

Sept 2007- June 2008 Course of :

- 1) Sobolev Spaces and application in PDE(undergraduate course);
- 2) Fourier analysis and its applications in signal processing;
- 3-Seminar of elliptic problems and variational Methods.

Sept 2008 - June 2009 Course of :

- 1) Nonlinear analysis and application in ODE (undergraduate course);
- 2) Seminar of elliptic problems and variational Methods.

Sept 2009- June 2011 Course of :

- 1) Nonlinear elliptic problems without compacity conditions, variational and topological methods (undergraduate course);
- 2) Functional analysis and application (Master 1);
- 3) Fourier Analysis and theory of distributions;
- 4) Measure theory and applications.

Sept 2011- June 2015 Course of :

- 1) PDE I and II Master dynamical systems and applications;
- 2) Nonlinear analysis and applications Master II;
- 3) Functional analysis and applications (Master 1);

- 4) Measure theory and applications;
- 5) Real analysis and applications.

Sept 2015 - June 2016 Course of :

- 1) Advanced course of PDE's and applications;
- 2) Advanced course of functional analysis;
- 3) Advanced seminar on Nonlocal problems.

Sept 2016 - June 2017 Course of :

- 1) Master course Functional spaces I and II;
- 2) Master course Nonlinear PDE's;
- 3) Advanced seminar on nonlinear fractional laplacian.

Sept 2017 - June 2018 Course of :

- 1) Master course Functional analysis I and II for probabilists;
- 2) Advanced course in Nonlinear PDE's and calculus of variation;
- 3) Advanced seminar on nonlinear elliptic and parabolic problems.

Sept 2018 - June 2019 Course of :

- 1) Master course Nonlinear analysis and elliptic equations;
- 2) Advanced course in Nonlinear elliptic problems with critical behavior;
- 3) Advanced seminar on nonlinear elliptic and parabolic problems with L^1 data.

Sept 2019 - June 2020 Course of :

- 1) Master course variational methods in nonlinear elliptic equations;
- 2) Advanced course in non local problems;
- 3) Advanced seminar on regularity theory of elliptic and parabolic problems".

Sept 2020 - June 2021 Course of :

- 1) Master course : advanced course of functional analysis;
- 2) Advanced courses : regularity results for Nonlocal problem : The case of the fractional Laplacian;
- 3) Advanced seminar : Non local parabolic problems : existence and asymptotic behavior".

Sept 2021 - June 2022 Course of :

- 1) Master course : advanced course of functional analysis;
- 2) Advanced courses : EDP II;
- 3) Advanced seminar : Viscosity solutions for local and nonlocal problems. "

Sept 2022 - June 2023 Course of :

- 1) Master course : Nonlinear analysis and variational problems;
- 2) Advanced courses : EDP II;
- 3) Advanced seminar : Fractional regularity for nonlocal problem and application.

11 LIST OF MAIN FOREIGN RESEARCH INSTITUTE VISITED

1) Host Institute : 1-Sissa (Trieste-Italy)

Duration of visit : 4 weeks, April-Jun 2005

Purpose of visit : Participation in a workshop-give a talk and Complete some scientific work with some members of the department.

- 2) Host Institute : Roma 1-Italy
Duration of visit : 1 week, Jan 2006
Purpose of visit : Participation in a congress and Complete some scientific work with some members of the department.
- 3) Host Institute : Carlos 3 of Madrid -Spain
Duration of visit : 1 week, Jun 2006
Purpose of visit : Complete some scientific work with some members of the department.
- 4) Host Institute : Universidad de Granada, Spain
Duration of visit : 1 week, mach 2007
Purpose of visit : Complete some scientific work with some collabotories from the department of Mathematics.
- 5) Host Institute : ICTP (Trieste-Italy)
Duration of visit : 8 weeks, march 2007, 2008, 2009, 2010, 2011, 2012
Purpose of visit : Participation in a workshop, scientific collaboration with some members of the department of Mathematics.
- 6) Host Institute : University Autonoma of Madrid-Spain
Duration of visit : 8 weeks, Jun 2007, Jun 2008, Jun 2010, June 2011, July 2012, December 2013, November 2014.
Purpose of visit : Complete some scientific work with some members of the department and give several talks.
- 7) Host Institute : École Normale Supérieure Kouba, Algies, Algeria.
Duration of visit : 1 week, May 2012.
Purpose of visit : Give a mini course on elliptic equations with gradient term, Complete some scientific work with some members of the mathematic department.
- 8) Host Institute : CMM - Center For Mathematical Modeling - Universidad de Chile.
Duration of visit : 10-21 November 2012.
Purpose of visit : Give a talk on "elliptic equations with singular terms", Complete some scientific paper in collaboration with members of the department.
- 9) Host Institute : Universidad de Valencia,
Duration of visit : 04-09 March 2013.
Purpose of visit : Complete some scientific paper in collaboration with members of the department.
- 10) Host Institute : CMM - Center For Mathematical Modeling - Universidad de Chile,
Duration of visit : 11-25 December 2014.
- 11) Host Institute : University Autonoma of Madrid-Spain
Duration of visit : 1-30 December 2015.
Purpose of visit : Complete some scientific work with some members of the department and give several talks.
- 12) Host Institute : CMM - Center For Mathematical Modeling - Universidad de Chile,
Duration of visit : 08-24 August 2016.
Purpose of visit : Give a talk on elliptic equations with singular terms, Complete some scientific paper in collaboration with members of the department.

13) Host Institute : Institut Elie Cartan de Lorraine (Campus Aiguillettes), Université de Lorraine, Nancy, France

Duration of visit : 14 February, 14 march 2017.

Purpose of visit : Complete some scientific paper in collaboration with members of the department.

14) Host Institute : Département de Mathématiques, Université de Besançon, Besançon, France
Duration of visit : 09-27 march 2018.

Purpose of visit : Give talk about nonlinear fractional elliptic problems with gradient term. Complete some scientific paper in collaboration with members of the department.

15) Host Institute : Département de Mathématiques, Université Ibn Tofail, Kénitra, Morocco

Duration of visit : 15-20 April 2019.

Purpose of visit : Give a series of talks about nonlinear elliptic problems with general dependence on the gradient : existence and multiplicity of positive solutions.

16) Host Institute : Institut Elie Cartan de Lorraine (Campus Aiguillettes), Université de Lorraine, Nancy, France

Duration of visit : 10 Jun, 10 August 2019.

Purpose of visit : Complete some scientific papers in collaboration with members of the department.

17) Host Institute : University Autonoma of Madrid-Spain

Duration of visit : 29/02/2020-14/03/2020.

Purpose of visit : Scientific collaboration with the group of nonlinear PDE's. Give a mini course on elliptic equations related to Hardy inequality.

18) Host Institute : Institut Elie Cartan de Lorraine (Campus Aiguillettes), Université de Lorraine, Nancy, France

Duration of visit : 01-30 Dec. 2021.

Purpose of visit : give a conference about global regularity for a class of nonlocal problems. Complete some scientific papers in collaboration with members of the department.

18) Host Institute : University Autonoma of Madrid-Spain

Duration of visit : 27/02/2023-13/03/2023.

Purpose of visit : Give a mini course on the regularity of nonlocal problem of master student (in the framework of erasmus grant).

12 Research Impact

MR Citation Database : Date, July, 2023. Author Citations : Boumediene Abdellaoui cited 974 times in the MR Citation Database.

Google citation : 1573. H index : 22. Index i10 : 38.

ORCID : 0000-0001-8232-1403