CURRICULUM VITAE
Prof. Mokhtar HAFAYED
Full Professor

Figure 1.

Adresses and e-mails

Emails: hafa.mokh@yahoo.com & m.hafayed@univ-biskra.dz
hafayedmokhtar@yahoo.com, Phone: (+213) 0665 681 828.
Adresses:

- *Department of Mathematics, Biskra University, Po Box 145, Biskra 07000 Algeria.*
- *Laboratory of Applied Mathematics LMA, Po Box 145, Biskra University, Biskra 07000, Algeria.*

Research Interests

- Stochastic control & Optimal control & Singular control
- Near-optimal stochastic control & Stochastic maximum principle.
- Controlled systems, Stochastic differential equations & Forward-backward stochastic systems.
- Poisson Jump diffusions. & Mean-field control problems and applications to finance.

Selected Publications

- §(**27**) Shahlar Meherrem, & **Mokhtar Hafayed,** & Syed Abbas: On Peng's type maximum principle for optimal control of mean-field stochastic differential equations with jump processes,International Journal of Modelling, Identification and Control. Accept; (2018)

- §(**26**) **Mokhtar Hafayed,** & Shahlar Meherrem & Saban Eren & Deniz H Guoclu,: *On optimal singular control problem for general McKean-Vlasov differential equations: Necessary and sufficient optimality conditions,*Optimal Control Applications and Methods DOI:10.1002/oca.2403. (2018)

- §(**25**) Shahlar Meherrem & **Mokhtar Hafayed** & Deniz H. Gucoglu & Saban Eren *A general characterization of the stochastic optimal combined control of mean field stochastic systems with application,*International journal of dynamics and Control, Doi Int. J. Dynam. Control DOI 10.1007/s40435-017-0323-9. (2018)

- §(**24**) **Mokhtar Hafayed,** & Shahlar Meherrem & Deniz H Guoclu, & Saban Eren *Variational principle for stochastic singular control of mean-field Lévy-forward-backward system driven by orthogonal Teugels martingales with application*International Journal of Modelling, Identification and Control*, DOI: 10.1504/IJMIC.2017.10006366, Vol 28, Issue 2, pp* 97–113. (2017).

- §(**23**) **Mokhtar Hafayed,** & Ghebouli Messaoud & Samira Boukaf & Yan Shi: *Partial information optimal control of mean-field forward-backward stochastic system driven by Teugels martingales with applications*(2016) DOI 10.1016/j.neucom. 2016.03.002. Neurocomputing Vol **200** pages 11–21 (2016).

- §(**22**) **Mokhtar Hafayed,** & Samira Boukaf, & Yan Shi, & Shahlar Meherrem.: *A McKean-Vlasov optimal mixed regular-singular control problem, for nonlinear stochastic systems with Poisson jump processes,*(2016) Neurocomputing. Doi 10.1016/j.neucom.2015.11.082, Volume **182**, 19, pages 133-144 (2016).

- §(**21**) **Mokhtar Hafayed**, & Abdelmadjid Abba & Syed Abbas: *On partial-information optimal singular control problem for mean-field stochastic differential equations driven byTeugels martingales measures,* ID: 1079648 DOI:10.1080/00207179.2015.1079648 Internat. J. Control **89** (2016), no. 2, 397–410.

- §(**20**) **Mokhtar Hafayed**, & Abdelmadjid Abba & Samira Boukaf: On Zhou's maximum principle for near-optimal control of mean-field forward-backward stochastic systems with jumps and its applications ,*"International Journal of Modelling, Identification and Control".**25** (1), 1-16, (2016).*

- §(**19**) Swati Tyagi, Syed Abbas, **Mokhtar Hafayed**: *Global Mittag-Leffler stability of complex valued fractional-order neural network with discrete and distributed delays, Rendiconti del Circolo Matematico di Palermo (1952-), Springer* . Doi 10.1007/s12215-016-0248-8, (2016).

- §(**18**) Boukaf Samira & **Mokhtar Hafayed**, & Ghebouli Messaoud: *A study on optimal control problem with $\varepsilon^{\lambda}-$error bound for stochastic systems with application to linear quadratic problem* , *International Journal of Dynamics and Control* DOI: 10.1007/s40435-015-0178-x. Volume 5, Issue 2, pp 297–305, (2017)

- §(**17**) **Mokhtar Hafayed** & Syed Abbas & Abdelmadjid Abba: On Mean-field Partial Information Maximum Principle of Optimal Control for Stochastic Systems with Lévy Processes,*Journal of Optimizations Theory and Applications. J Optim Theory Appl (2015) 167:1051–1069 (2015).*

- §(**16**) **Mokhtar Hafayed**, & Moufida Tabet & Samira Boukaf: Mean-field maximum principle for optimal control of forward-backward stochastic systems with jumps and its application to mean-variance portfolio problem,*Communication in Mathematics and Statistics***,** Doi: 10.1007/s40304-015-0054-1, Volume 3, Issue 2, pp 163-186 (**2015**)

- §(**15**) **Mokhtar Hafayed**, Petr Veverka, Syed Abbas: On Near-optimal Necessary and Sufficient Conditions for Forward-Backward Stochastic Systems with Jumps, with Applications to Finance, *Applications of Mathematics***, 59**(4), 407-440 (2014).

- §(**14**) **Mokhtar Hafayed:** Singular mean-field optimal control for forward-backward stochastic systems and applications to finance,*International Journal of Dynamics and Control,* Doi: 10.1007/s40435-014-0080-y, **2**(4), 542-554, (2014).

- §(**13**) Syed Abbas, Lakshman Mahto, Angelo Favini, **Mokhtar Hafayed**: Dynamical Study of Fractional Model of Allelopathic Stimulatory Phytoplankton Species, *Differential Equation and Dynamical Systems***,** Doi 10.1007/s12591-014 -0219-5 Volume 24, Issue 3, pp 267-280 (2016).

- §(**12**) Syed Abbas, Lakshman Mahto, **Mokhtar Hafayed,** Adel. M.Alimi: Asymptotic almost automorphic solutions of impulsive neural network with almost automorphic coefficients *Neurocomputing* Vol (**142),** 326–334 (2014).

- §(**11**) Syed Abbas, Chen Ki Yang , **Mokhtar Hafayed**: Stepanov type weighted pseudo almost automorphic sequences and their applications to difference equations *Nonlinear Studies,* Vol **21**(1), 99-111 (2014).

- §(**10**) **Mokhtar Hafayed:** A Mean-field Necessary and Suffucient Conditions for Optimal Singular Stochastic Control . *Communications in Mathematics and Statistics*, Doi: 10.1007/s40304-014-0023-0, **1**(4), 417–435 (2014).

- §(**09**) **Mokhtar Hafayed**, Abdelmadjid Abba, Abbas Syed: On mean-field stochastic maximum principle for near-optimal controls for poisson jump diffusion with applications.*International Journal of Dynamics and Control***,** Doi: 10.1007/s40435-013-0040-y, Vol **2**(3), 262–284 (2014).

- §(**08**) **Mokhtar Hafayed:** A mean-field maximum principle for optimal control of forward-backward stochastic differential equations with poisson jump processes. *International Journal of Dynamics and Control*, Doi: 10.1007/s40435-013-0027-8, Int. J. Dynam. Control, **1**(4) 300-315 (2013).

- §(**07**) **Mokhtar Hafayed** , Syed Abbas: On Stochastic Near-optimal Singular Controls for Jumps Diffusions: Necessary and Sufficient Conditions , *Journal of Dynamical and Control Systems*, **19**(4), 503-517, (2013).

- §(**06**) **Mokhtar Hafayed,** Syed Abbas: On Near-optimal Mean-field stochastic singular controls: necessary and sufficient conditions for near-optimality . *Journal of Optimization Theory and Applications***,** Doi 10.1007/s10975-013-0361-1,.Vol **160,** 778–808 (2014).

- §(**05**) **Mokhtar Hafayed** , Syed Abbas, Petr Veverka : On necessary and sufficient conditions for near-optimal singular stochastic controls, *Optimization Letters***,** Optim. Lett. (**7**)5, 949-966, (2013).

- §(**04**) **Mokhtar Hafayed** , Petr Veverka , Syed Abbas: On Maximum Principle of Near-optimality for Diffusions with Jumps, with Application to Consumption-Investment Problem, *Differential Equation and Dynamical Systems*, Vol **20**(2), pp, 111-125, (2012).

- §(**03**) **Mokhtar Hafayed** , Syed Abbas: Filippov Approach in Necessary Conditions of Optimality for Singular Control Problem , *Inernatinal Journal of Pure and Applied Mathematics, IJPAM*, Vol 77, N°5, 667-680, (2012)

- §(**02**) **Mokhtar Hafayed** , Syed Abbas: Generalized Gradient in Weak Maximum Principle With Non-differentiable Drift . *International Journal of Evolution Equations IJEE***,** Vol 6, N°1, pp., 17-29, (2012).

- §(**01**) **Mokhtar Hafayed:** Filippov Approach in Stochastic Maximum Principle without Dfferentiability Assumptions . *Electonic Journal of Differential Equations*, Vol 2010, 1-13, (2010).

Professional Activities and Community Engagement

Serves as an *Editorial Board Member* of the following scientific journal:
International Journal of Modeling , Identification and Control IJMIC from 2017-

Serves as an active reviewer for international journals, such as

- International Journal of Control, **Taylor & Francis**
- Automatica
- Mathematical Problems and Engineering, **Hindawi**
- Appl. Math. J. Chinese Univ, **Springer-Verlag**
- Bulletin of the London Mathematical, **Oxford Journal.**
- IEEE Transactions on Automatic Control, **IEEE**

- IEEE Transactions on Industrial Electronics **IEEE**
- IET Control Theory & Control **IEEE**
- Journal of Industrial and Management Optimization, **AIMS**
- International Journal of Modeling , Identification and Control **IJMIC**
- International Journal of Dynamics and control **IJDY**
- Applied Mathematics and Optimizations, **Springer**

Conference Proceedings

- A new lower bound on the total weighted completition time for the one machine sheduling problem (a)" Journées des Mathématiques Appliquées. JMA2000. **Université de Blida, le 13-14/11/2000.**

- A new lower bound on the total weighted completition time for the one machine sheduling problem (b)" . 2ièm Rencontré International de Mathématiques et ses Appliquations. **RAMA1. Université de M'sila, le 19-21/11/2000**

- Generalized gradients and stochastic control" . Journées Internationales de Mathématiques Appliquées de SAFI, JMASA2000. **Université de Cadi Ayyad, Maroc, le 25-27/06/2008**

- Generalized gradients in stochastic optimal control" . V-th International Workshop on Probability and stochastic analysis. **Biskra, le 17-18/12/2008.**

- Filippov's Approach in Stochastic Optimal Control". Conférences Internationale de Mathématiques et Applications CIMA09, **Annaba, le 26-28-/10/2009.**

- Filippov Approach in Necessary Conditions of Optimal Stochastic Control" , International Workshop in Mutivariate Risks and copulas ,**Biskra , le 12-15/04/2010.**

- On generalized gradient in weak maximum principle with non differentiable drift" , Workshop International sur les Mathématiques Appliquées et la modilisation **"WIMAM'2011" Guelma , le 25-26/09/2011.**

- On near-optimal stochastic singular controls: Necessary and sufficient conditions for near-optimality", Workshop de Probabilités et Statistiques à la mémoire du Seid Bahlali , **Biskra 29-30, Jan 2013.**

Participations and organisations

- Participation in School of CIMPA-Unesco, Tunisie, *Probabilités et physiques Mathématiques, Mahdia, Tunisie, 02-08/08/2004.*

- Participation in oganisation of ”3-th International Workshop on Processus Aléatoires”, *Laboratoire de Mathématiques Appliquées, Biskra, 26-27/02/2005.* Dec 2004.
- Participation in oganisation of Journées de Statistiques Appliquées” *Laboratoire de Mathématiques Appliquées, Biskra, 26-27/02/2005.*
- Participation in oganisation of ”4- th International Workshop on Processus Aléatoires”, Biskra, Déc /2006.
- Participation in oganisation ”*Journées de Statistiques Théorique et Appliquée (JSTA)”, Laboratoire de Mathématiques Appliquées, Biskra, 21-22/02/2007.*
- Participation in oganisation ”*V-th International Workshop on Probability and Stochastic Analysis ”, Biskra 17-18/12/2008.*
- Participation in oganisation” *International Workshop on in Mutivariate Risks and copulas” , Biskra , le 12-15/04/2010.*

Reaserch projects

- Project manager of Algerian PNR: Projet National de Recherches Title ”Sur certain aspects des équations différentielles stochastiques et leur contrôle optimal”: 08/u07/857, 2011-2013.
- Member in Algerian CNEPRU 2008/2011/2013.
- Project manager of Algerian CNEPRU 2014-2016, N° – B01420130137. Title: ”*Contrôle stochastique optimal et presque optimal et leurs applications.*”