

## CURRICULUM VITAE

**Hassairi Abdelhamid**

**Professor of Mathematics (Probability and Statistics),  
Member of Tunisian Academy of Sciences, Letters and Arts (BeitElhikma)  
Founder Head of the Laboratory of Probability and Statistics, Sfax University,  
(It was founded in 1994; I have been its director from 1994 till 2014).  
Associate Editor Journal of Multivariate Analysis for 7 years 2010-2017**

### **Contact:**

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### **Employment history**

2015-       **Emeritus Professor, Faculty of Sciences, Sfax.**  
1994-2015 , **Professor, Faculty of Sciences, Sfax.**  
2004-2005, **Invited Professor, York University Toronto (CANADA)**  
1990-1994, **Maître de conférence associé (Associate professor), Université Paul  
Sabatier de Toulouse (FRANCE)**  
1982-1990, **Maître assistant (Assistant professor), Ecole Nationale d'Ingénieur  
de Sfax**  
1979-1982, **Maître assistant , Faculté des Sciences et Techniques de Sfax**  
1977-1979, **Assistant, Faculté des Sciences et Techniques de Sfax.**

### **Research Interests**

Probability Theory and Statistics:  
Classical probability  
Non-commutative probability,  
Random matrices,  
Exponential families.

## Publications

- Hassairi, A. (2019) **Exponential probability distribution on symmetric matrices**  
( with A. Roula )  
*Statistics and Probability Letters* 145, 37-42
- Hassairi, A. (2018) **Singular Riesz measures on symmetric cones**  
( with S. Lajmi )  
*Adv. Oper. Theory* 3, no. 2, 12-25
- Hassairi, A. (2017) **Some new properties of the Riesz probability distribution**  
*Math. Meth. Appl. Sci.*, 40: 5946-5958  
( with S. Lajmi and R. Zine)
- Hassairi, A. (2017) **Beta-hypergeometric probability distribution on symmetric matrices**  
( with Mouna Masmoudi and Ons Regaig )  
*Advances in Applied Mathematics* 89 (2017) 184-199
- Hassairi, A. (2014) **On the Cauchy-Stieltjes Kernel families**  
( with Wlodek Bryc and Raouf Fakhfakh )  
*Journal of Multivariate Analysis* 124 (2014) 295312
- Hassairi, A. (2013) **Bayesian approach to cubic natural exponential families**  
( with Marwa Hamza )  
*Statistics and Probability Letters* 83 (2013) 1946-1955
- Hassairi, A. (2013) **Mixture of the Riesz Distribution with Respect to a Multivariate Poisson**  
( with Louati, M. )  
*Communications in Statistics Theory and Methods*, 42: 1124-1140
- Hassairi, A. (2011) **Extension of the Olkin and Rubin Characterization to the Wishart distribution on Homogeneous cones**  
( with Boutouria, I. and Massam, H.)  
*Infinite Dimensional Analysis, Quantum Probability and Related Topics* 14, 4, 591-611
- Hassairi, A. (2011) **One-sided Cauchy-Stieltjes Kernel Families**  
*Journal of Theoretical Probability* 24: 577-594  
( with Wlodzimierz Bryc)
- Hassairi, A. (2010) **A limit theorem on symmetric matrices**  
*Georgian Mathematical Journal*, Volume 17, Issue 4, Pages 641-647
- Hassairi, A. (2009) **On the Dirichlet distributions on symmetric matrices**  
*Journal of Statistical Planning and Inference*, 139, 8, 1 2559-2570  
( with Mohamed Ben Farah)
- Hassairi, A. (2009) **Characterizations of the beta distribution on symmetric matrices** *Journal of Multivariate Analysis* 100 1682-1690  
(with O. Regaieg)
- Hassairi, A. (2009) **”On the projections of the Riesz Dirichlet distribution ”**  
*J. Math. Analysis and Applications* 349, 367-373  
(with M. Masmoudi and R. Zine)

- Hassairi, A. (2009) ”**Multivariate stable exponential families and Tweede scale**”  
*J. Stat. Plann. Inf.* **139**, 143-158.  
 (with Mahdi Louati)
- Hassairi, A. (2008) ”**A characterization of the Riesz distribution**”  
*Journal of Theoretical Probability* **21**, 773-790.  
 (with Lajmi, S and Zine, R.)
- Hassairi, A. (2008) ”**On the Tukey depth of a continuous probability distribution**”  
*Statistics and Probability letters* **78**, 2308-2313  
 (with Regaieg, O.)
- Hassairi, A. (2007) ”**Riesz Inverse Gaussian distribution**”  
*J. Stat. Plann. Inf.* **137** 2024-2033  
 (with Lajmi, S. and Zine, R.)
- Hassairi. A. (2007) ” **Characterization of the Dirichlet distribution on symmetric matrices**” *Statistics and Probability letters* **77** 357-364.  
 (with Ben Rarah M.)
- Hassairi, A. (2007) ” **On the Tukey depth of an atomic measure**”  
*Statistical Methodology* **4**, 244-249  
 (with Regaieg O.)
- Hassairi, A. (2006) ”**Characterization of the simple Cubic multivariate Exponential Families**”. *Journal of Fonctional Analysis* **235** 69-89  
 (with Zarai, M.)
- Hassairi, A. (2005) ”**Beta-Riesz distributions on symmetric cones**”  
*J. Stat. Plann. Inf.* **133**, 387-404.  
 (with Lajmi S. and Zine R.)
- Hassairi A. (2005) ”**Extension of the Variance Function of a Steep Exponential Family**”.  
*Journal of Multivariate Analysis* **92** 239-256.  
 (with Masmoudi, A.)
- Hassairi, A. (2005) **Implicit distribution and estimation**”  
*Communication in Statistics* **34** 2, 245 - 252.  
 (With Kokonendji, C. and Masmoudi, A)
- Hassairi. A. (2005) ” **Bhattacharyya matrices and cubic exponential families**”  
*Statistical Methodology* **2** 226-232  
 (with M. Zarai )
- Hassairi, A. (2004) ”**Classification of Riesz Exponential Families on a Symmetric Cone by Invariance Properties**”.  
*Journal of Theoretical Probability. Vol 17 No. 3, 521-539.*  
 (with Lajmi, S.)
- Hassairi, A. (2004) **Characterization of the Cubic Exponential Families by a Property of Orthogonality of Polynomials.**  
*Annals of Probability Vol 32 No. 3B, 2463-2476.*  
 (with Zarai, M.)
- Hassairi. A. (2003) ”**On the factorization of a convex plane set**”  
*Archives of inequilities and applications* **1** 295-304
- Hassairi. A. (2001) ”**Riesz Exponential Families on Symmetric Cones**”.  
*Journal of Theoretical Probability, Vol. 14, No. 4, 927-948.*

(with Lajmi, S.)

- Hassairi. A. and Masmoudi, A. (2001) ”**The mean radius of curvature of an exponential family**” *Statistics and Probability letters* 55 213-220.
- Hassairi. A. (1999) ” **Generalized Variance and Exponential Families**” *Annals of Statistics, Vol. 27, No. 1*, 274-285.
- Hassairi. A. (1996) ” **Sur la variance généralisée** ” *C. R. Acad. Sci. Paris, t. 322, Série 1*, p. 277-280
- Hassairi. A. (1993) ” **Les (d+3) G-orbites de la classe de Morris-Mora des familles exponentielles de  $\mathbb{R}^d$**  ” *C. R. Acad. Sci. Paris, t. 317, Série 1*, p. 887-890
- Hassairi. A. (1993) ” **Les orbites des lois multinomiales et de Poisson sur  $\mathbb{R}^d$  par l’action du groupe linéaire de  $\mathbb{R}^{d+1}$** ” *C. R. Acad. Sci. Paris, t. 316, Série 1*, p. 1087-1090
- Hassairi. A. (1992) ” **La classification des familles exponentielles naturelles sur  $\mathbb{R}^n$  par l’action du groupe linéaire de  $\mathbb{R}^{n+1}$** ” *C. R. Acad. Sci. Paris, t. 315, Série 1*, p. 207-210

## Colloquium

- \* **6th Tunisian-Japanese Conference: Geometric and Harmonic Analysis on Homogeneous Spaces and Applications**  
*Invited lecture:* Exponential probability distribution on symmetric matrices.  
Djerba, December 16-19, 2019
- \* **The Second Mathematics conference of the Maghreb Academies of Sciences**  
Rabat, September 23-24, 2018.  
*Invited lecture:* Some extensions of the beta probability distribution on symmetric matrices
- \* **Fifth Tunisian-Japanese Conference: Geometric and Harmonic Analysis on Homogeneous Spaces and Applications**  
Mahdia, December 17-21, 2017
- \* **The 10th Tartu Conference on Multivariate Statistics**  
*Invited lecture:* Beta-hypergeometric probability distribution on symmetric matrices  
Tartu, Estonia 28 June - 1 July 2016
- \* **Marrakesh International Conference on Probability and Statistics**  
third edition 25-28 April 2016, Marrakesh  
*Invited lecture:* Beta-hypergeometric probability distribution on symmetric matrices.
- \* **4rd Tunisian-Japanese Conference: Geometric and Harmonic Analysis on Homogeneous Spaces and Applications**  
*Invited lecture:* Beta-hypergeometric probability distribution on symmetric cones.  
Monastir, December 18-23, 2015
- \* **Journées de Probabilités 2014**  
CIRM, Marseille, France du 17 au 22 juin 2014  
*Invited lecture:* Cauchy Stieltjes Kernel families.
- \* **23rd International Workshop on Matrices and Statistics**

- Ljubljana, Slovenia from June 9 to June 12, 2014  
*Invited lecture:* Riesz distributions on symmetric matrices and the Olkin-Rubin Characterization.
- \* **3rd Tunisian-Japanese Conference: Geometric and Harmonic Analysis on Homogeneous Spaces and Applications**  
 Hammamet, December 18-21, 2013  
*Invited lecture:* Cauchy Stieltjes Kernel families .
  - \* **Conférence biennale de l'ANR: Lévy processes and Self Similarity**  
 Hammamet, November 4-9, 2013  
*Invited lecture:* Iterations of Cauchy Stieltjes kernel families and extension of domain of the means.
  - \* **Journées de Probabilités 2013**  
 Orleans, France du 17 au 22 juin 2013  
*Invited lecture:* Riesz and related distributions on symmetric matrices.
  - \* **International Conference on Stochastic Analysis and Applied Probability Journées Jeunes Chercheurs**  
 Annaba, Algrie du 22-23 avril 2013  
*Invited lecture:* Riesz and related distributions.
  - \* **Journées de Probabilités 2011**  
 Nancy, France du 20 au 24 juin 2011  
*Invited lecture:* Cubic Cauchy-Stieltjes kernel families.
  - \* **International Conference on Stochastic Analysis and Applied Probability (SAAP 2010)**  
 Hammamet, Tunisia, October 7-9, 2010, Tunisia  
*Invited lecture:* Cubic Cauchy-Stieltjes kernel families.
  - \* **Workshop on Inverse Problems, Data and Mathematical Statistics and Ecology**  
 Linkoping, Sweden, May 20-21, 2010  
*Invited lecture:* Dispersion exponential models.
  - \* **Cincinnati Symposium on Probability Theory and applications**  
 Cincinnati, USA, March 20-23, 2009  
*Invited lecture:* On the Dirichlet distribution on symmetric matrices.
  - \* **10th Workshop on Noncommutative Harmonic analysis with applications to probability**  
 Bedlewo, Poland, August 5-12, 2007  
*Invited lecture:* Exponential Families and orthogonal polynomials.
  - \* **Journées de Statistique**  
 Angers (France), June 11-15, 2007  
*Communication (with Boutouria):* Riesz Exponential Families on Homogeneous Cones.
  - \* **International conference of Harmonic analysis and applications**  
 Sousse-Tunisia, November 6-11, 2006  
*Invited lecture:* Characterizations of the Riesz distributions on symmetric cones.
  - \* **International Congress of Mathematicians. (ICM 2006)**  
 Madrid, August 22-30, 2006  
*Communication:* Characterizations of the beta distributions on symmetric matrices.
  - \* **Workshop on Wishart and Related Random Variable**  
 Mahdia, Tunisia, May 29-June 3, 2005

- Invited lecture:* Tweede scale on symmetric matrices.
- \* **Workshop on Wishart and Related Random Variable**  
Sigtuna, Stockholm, June 21-28, 2004  
*Invited lecture:* Beta Riesz distributions.
  - \* **Journées de Probabilités**  
Toulouse, September 8-12, 2003.  
*Invited lecture:* Characterization of the Letac-Mora class of cubic exponential families by orthogonality of polynomials
  - \* **International Congress of Mathematicians. (ICM 2002)**  
Beijing, August 20-28, 2002
  - \* **Journées du groupe Modélisation Aléatoire et Statistique de la SMAI**  
Rennes, September 6-8, 2000  
*Communication:* "Familles exponentielles naturelles de Riesz"
  - \* **Seminar on Algebraic Methods in Graphical Markov Models**  
Toronto, Oct 25 to Nov 12, 1999  
*Invited lecture:* Generalized variance transform .
  - \* **XXXI<sup>èmes</sup> Journées de l'A.S.U.**  
Grenoble, May 17-21, 1999.  
*Communication* " Asymptotic Structure of a Variance Fonction "
  - \* **Journées du Réseau Européen du G.C.A.S.P.**  
Toulouse, October 24-31, 1997.  
*Invited lecture:* Generalized Variance and Exponential Families
  - \* **2<sup>èmes</sup> Journées Franco- Tunisiennes " Modèles Mathématiques Stochastiques et Déterministes"**  
Toulouse, May 17-21, 1996  
*Invited lecture:* On the generalized variance.
  - \* **1<sup>ères</sup> Journées MAG-MAT " Algorithmes Stochastiques"**  
Bizerte du 1 au 5 novembre 1994.  
*Invited lecture:* Action of  $GL(\mathbb{R}^{n+1})$  on Natural Exponential Families of  $\mathbb{R}^n$
  - \* **1<sup>ères</sup> Journées Franco- Tunisiennes " Modèles Mathématiques Stochastiques et Déterministes"**  
Kerkennah, July 18-21, 1994.  
*Invited lecture:* Conjugate Natural Exponential Families

## Graduate student supervision

### I/ Doctoral students

I am supervising the thesis of Amel Roula entitled

*Exponential probability distribution on symmetric matrices*

1) LAJMI Sallouha

*Les Familles exponentielles de Riesz sur les cônes Symetriques*

January 1998.

2) MASMOUDI Afif

*Structures Asymptotiques d'une Fonction Variance*

December 2000.

3) Zarai Mohamed

*Caractérisation des Familles Exponentielles cubiques par une propriété d'orthogonalité de polynômes*

February 2005.

4) Zine Raoudha

*Beta Riesz and Riesz inverse Gaussian distributions on symmetric cones*

June 2005

5) Imen Boutouria

*Characterizations of the Wishart distribution on homogeneous cones*

February 2009

6) Ons Regaieg

*Contribution to the study of the Tukey depth function*

February 2009

7) Mahdi Louati

*Multivariate stable exponential families and Tweede scale*

March 2009

8) Mohamed Ben Farah

*On the Dirichlet distribution on symmetric matrices*

January, 2010

9) Mariam Tounsi

*Inverse Riesz and Complex Dirichlet-Riesz distributions*

April 11, 2013

10) Mohamed Kharrat

*American Option Pricing Modeling under Stochastic Volatility Using Malliavin Calculus*

September, 4 2014

11) Raouf Fakhfakh

*Contribution to the Study of Cauchy Stieltjes Kernel Families*

October 2, 2014

12) Majdi Elhiwi.

*Stochastic Modeling for Evaluation of Credit Derivatives Using Copula Functions*

Defense on December 20, 2014

13) Marwa Hamza

*Caractérisations des familles exponentielles naturelles cubiques. étude des lois Beta généralisées et de certaines lois de Kummer*

Defense on May 19, 2015 in Nancy

14) Mouna Masmoudi

*Lois bêta-hypergéométriques sur le cône des matrices symétriques définies positives*

Defense on July 2017.

## **II/ Masters' students**

1) Masmoudi Afif (1996),

2) Mtibaa Dalinda (1996),

- 3) Zarai Mohamed (1998),
- 4) Masmoudi Mouna 1 (2001),
- 5) Zine Raoudha (2001),
- 6) Boutouria Imen (2002)
- 7) Regaieg Ons ( Janvier 2004)
- 8) Louati Mahdi ( Janvier 2004)
- 9) Ben Farh Mohamed (July 2004)
- 10) Elhiwi Wajdi (June 2009)
- 11) Tounsi Myriem (June 2009)
- 12) Maroua Hamza (June 2011)
- 13) Mouna Masmoudi 2 (June 2011)
- 14) Raouf Fakhfakh (June 2011)