

Program of the 12th edition of Numerical
Analysis and Optimization Days
Organized by
Al-Hoceima University Center
(ENSAH and FSTH)

October, 18th -20th, 2018
in Al-Hoceima, Morocco



Royaume du Maroc
Ministère de l'Éducation Nationale, de la Formation Professionnelle,
de l'Enseignement Supérieur et de la Recherche Scientifique
Secrétariat d'État Chargé de l'Enseignement Supérieur
et de la Recherche Scientifique



Académie
Hassan II
des Sciences
& Techniques



Technical Program

Thursday, October 18, 2018		Friday, October 19, 2018		Saturday, October 20, 2018	
FSTH		FSTH		FSTH	
08 :00	Registration Faculté des Sciences Techniques d'Al Hoceima (FSTH)	09 :00	Plenary Lecture Mohammed SEAÏD	09 :00	Plenary Lecture Abdelaziz RHANDI
09 :00	Opening Ceremony	10 :00	Coffee Break	10 :00	Coffee Break
09 :30	Coffee Break	10 :30	Session 12	10 :30	Session 19
10 :00	Opening Plenary Lecture Abderrahman BOUHAMIDI		Session 13		Session 20
	11 :00		Session 1		Session 14
11 :00			Session 2 Session 3 Session 4		Session 15
13 :15	Lunch	12 :15	Lunch	12 :15	Closing
13 :15	Lunch	13 :15	Prayer	12 :30	Lunch
15 :00	Plenary Lecture Carole ROSIER	15 :00	Plenary Lecture Alain BRILLARD	15 :00	Excursion and Visit to Al Hoceima City
16 :00	Session 5	16 :00	Poster Session		
	Session 6				
	Session 7				
	Session 8				
17 :00	Coffee Break	17 :00	Coffee Break		
17 :30	Session 9	17 :30	Session 16		
	Session 10		Session 17		
	Session 11		Session 18		

Thursday, October 18, 2018

08 :00—09 :00 Registration at “Faculté des Sciences Techniques FSTH”

09 :00—09 :30 Opening Ceremony AMPHI FSTH

09 :30—10 :00 Coffee Break

10 :00—11 :00 Opening Plenary Lecture AMPHI FSTH

Professor BOUHAMIDI Abderrahman

Chairman : HEYOUNI Mohammed

12 :00—13 :00 Parallel Sessions

	Session 1 : Salle A Chairman : El Houssine AZROUL	Session 2 : Salle B Chairman : Mohamed RHOUDAF	Session 3 : Salle C Chairman : Khalid NAJIB	Session 4 : Salle D Chairman : Hassan EL AMRI
11 :00	Some existence and uniqueness results for impulsive differential Equations. <i>Halimi BERREZOUG</i>	Superconvergent product integration method for Hammerstein equations. <i>Chafiq ALLOUCH*, Driss SBIBIH Mohamed TAHRICHI</i>	Inference on ARCH models with randomly coefficients. <i>Mohammed BENMOUMEN, Mohammed Aymane ZAID*</i>	A new variant of Halley’s method with third-order convergence to solve nonlinear equations. <i>Mohammed BARRADA*, Idriss CHANA, Abdallah RHATTOY</i>
11 :20	Towards functional analysis for non-Newtonian fluids. <i>Ahmed Youssfi</i>	Tensor product spline quasi-interpolation for fitting 3D data on the sphere. <i>Salah Eddine BOUHIRI*, Abdellah LAMNII, Morad LAMNII</i>	Numerical modelling of solidification coupled with chemical exchanges and differential liquid-solid transport in magma reservoirs <i>Morad LAKHSSASSI</i>	Numerical simulation of MHD slider bearings using successive over-relaxation method. <i>Mouhcine MOUDA*, Mohamed NABHANI, Mohamed EL KHLIFI</i>
11 :40	The weak rate of convergence for the Euler-Maruyama method for time-inhomogeneous SDEs with local time of the unknown process. <i>Mohsine BENABDELLAH, Mohamed BOURZA*</i>	A new domain decomposition method for the Helmotz equation. <i>Mohamed Ridouan AMATTOUCH*, Hassan BELHADJ</i>	Fractional viscoelastic wave attenuation modeling. <i>Mohamed AIT ICHOU*, Hassan EL AMRI, Abdelaziz Ezziani</i>	A hybrid finite volume scheme for reactive solute transport in porous media naturally suited for a domain decomposition approach. <i>Abdelaziz TAAKILI, Mustapha ZARROUK*</i>

13:00—15:00	Lunch
15:00—16 :00	Plenary Lecture AMPHI FSTH Professor ROSIER Carole Chairman: NAJIB Khalid
16 :00—17 :00	Parallel Sessions

	Session 5 : Salle A Chairman : Abderrahman BOUHAMIDI	Session 6 : Salle B Chairman : Carole ROSIER	Session 7 : Salle C Chairman : Abdelaziz RHANDI	Session 8 : Salle D Chairman : Ali BOUTOULOUT
16 :00	<p>Moving least squares and Gauss-Legendre for solving the integral equations of the second kind.</p> <p><i>Rachid EL JID*, Zahra EL MAJOUTI</i></p>	<p>Proximal Bundle Algorithms for Nonlinearly Constrained Convex Minimax Fractional Programs.</p> <p><i>Karima BOUFI*, S. ADDOUNE, Ahmed ROUBI</i></p>	<p>A Fractional Optimal Control Problem for a Riemann–Liouville Differential System with State Constraints</p> <p><i>Touria KARITE*, Ali BOUTOULOUT, Delfim F. M. TORRES.</i></p>	<p>Restarted Simpler block GMRES method for sequences of shifted linear systems.</p> <p><i>Lakhdra El Bouyahyaoui*, Mohammed Heyouni</i></p>
16 :20	<p>A new technique for optimal fixed length parameter in gradient method when solving Biharmonic problem as optimization one</p> <p><i>Loubna BOUDJAJ*, Ahmed NAJI, Fatima GHAFRANI, CS. CHEN</i></p>	<p>Numerical optimization of the likelihood function based on Kalman Filter in the ARCH models.</p> <p><i>Mohammed BENMOUMEN*, Jelloul ALLAL</i></p>	<p>Bifurcation analysis and control of a fractional-order chaotic system via time-delayed feedback method.</p> <p><i>Mohamed ELIDRISSI*, Zakia HAMMOUCH, Toufik MEKKAOUI</i></p>	<p>Two-point Padé approximants and continued fractions.</p> <p><i>Yassine CHAKIR*, Jalil ABOUIR, Brahim BENOUAHMANE</i></p>
16 :40	<p>A stable numerical meshless method for modeling water flow in multilayered soil.</p> <p><i>El Hassan BEN AHMED*, Mohamed SADIK, Mohamed WAKRIM</i></p>	<p>Proximal Bundle Methods Based on Approximate Subgradients for Solving Lagrangian Duals of Minimax Fractional Programs.</p> <p><i>Hssaine BOUALAM*, Ahmed ROUBI</i></p>	<p>Regional Enlarged Observability of Caputo Fractional Differential Equations.</p> <p><i>Hayat ZOUTEN*, Ali BOUTOULOUT, Delfim F. M. TORRES.</i></p>	<p>An alternative extended block method for solving Sylvester Equations</p> <p><i>Ilias ABDAOUI*, L. EL BOUYAHYAOU Mohammed HEYOUNI</i></p>
17 :00	<p>3D interpolation error with the PCD Method.</p> <p><i>Ahmed TAHIRI</i></p>	<p>On ε-optimality and ε-Lagrangian Duality for vector quadratic fractional pseudoconvex programming.</p> <p><i>Abdessamad JADDAR</i></p>	<p>A coupling method involving the Sumudu transform and the HPM for solving a class of local fractional equations.</p> <p><i>Kamal AIT TOUCHENT*, Z. HAMMOUCH, T. MEKKAOUI</i></p>	<p>On the convergence of Two-point qd-algorithm.</p> <p><i>Abdennasser ELIDRISSI*, Jalil ABOUIR, Brahim BENOUAHMANE</i></p>

17 :20—17:40

Coffee Break

17 :40—18 :30

Parallel Sessions

	Session 9 : Salle C Chairman : Mohamed ADDAM	Session 10 : Salle A Chairman : Saïd MELLIANI	Session 11 : Salle B Chairman : Abdellatif CHAIRA
17 :40	Formulation of machine learning as an inverse problem. <i>Mourad NACHAOU*</i> , <i>Marouane CHAOUCH</i>	Linear Mixed Effect Models and Application in Economy. <i>Mounir BOUMHAMDI</i>	An efficient semi-Lagrangian finite element scheme for three-dimensional transport problems. <i>Bassou KHOUYA*</i> , <i>Mofdi EL-AMRANI</i> , <i>Mohammed SEAID</i>
18 :00	Influence of natural convection on stability of reaction fronts propagation in liquids. <i>Loubna SALHI*</i> , <i>Ahmed Taik</i>	An alternating direction method of multipliers for the total variation regularization. <i>Abdeslem Hafid BENTBIB</i> , <i>Abderrahman BOUHAMIDI</i> , <i>Karim KREIT*</i>	Controllability of the semilinear heat equation Via Bilinear Control. <i>Issam EL HARRAKI*</i> , <i>Khalid NAJIB</i> , <i>Ali BOUTOULOUT</i>
18 :20			A conforming enriched finite difference method for problems with oblique boundary. <i>Lmokhtar IKHARRAZNE</i>

Friday, October 19, 2018

09:00—10:00

Plenary Lecture
Professor SEAÏD Mohammed
Chairman : CHAIRA Abdelatif

Amphi FSTH

10:00—10:30

Coffee Break

10:30—12:10

Parallel Sessions

	Session 12 : Salle A Chairman : Ahmed YOUSSEFI	Session 13 : Salle B Chairman : Zakaria EL ALLALI	Session 14 : Salle C Chairman : Anass EL HADDADI	Session 15 : Salle D Chairman : Ali BOUTOULOUT
10 :30	Multiplicity results for Dirichlet problem involving the $p(x)$ -biharmonic operator via the Nehari manifold approach. <i>Said Taarabti*, Zakaria El Allali, Khalil Ben Haddouch</i>	Uniqueness of solution for the higher dimension Boussinesq equation non linear with integral condition. <i>DRAIFIA ALA EDDINE</i>	Asymptotic behavior and stability for a Leukemia Delay model of stem cells under treatment. <i>Mohamed HELAL*, I. YOUNES, A. Lakmeche</i>	Numerical Modelling of magnetic field influences on natural convection withing a square cavity field with nanofluid. <i>Anass BENDARAA, Mly. Mustapha CHARAFI*, Abdellatif HASNAOUI</i>
10 :50	Eigenvalue Problems involving the fractional $p(x)$ -Laplacian Operator. <i>Elhoussine Azroul, Abdelmoujib Benkirane Mohammed Shimi*</i>	On singular problems involving fractional Laplacian with measure sources. <i>Ould Med Mahmoud Ghoulam*, Ahmed Youssfi</i>	Finite volume DDFV method for anisotropic degenerate chemotaxis model. <i>Mohamed Rhoudaf Naoufal STAÏLI*</i>	Numerical transport for a non aqueous-phase organic liquid in porous media. <i>Youness ABOUELHANOUNE*, S. BENLGHRIB</i>
11 :10	Existence and multiplicity of solutions for a $p(x)$ -biharmonic Problem. <i>Fouzia MORADI*, Abdel Rachid EL AMROUSS, Mimoun MOUSSAOUI</i>	Existence of solutions for quasilinear parabolic systems under mild monotonicity in Orlicz spaces. <i>El Houssine AZROUL, Farah BALAADICH*</i>	Global analysis of an SIRI epidemic model with distributed delay and relapse. <i>Abdesslem LAMRANI ALAOUI*, Abdelhai ELAZZOUI, Mouhcine TILIOUA</i>	Numerical treatment of an elliptic equation by finite difference method. <i>Fatna JAAFRI*, Mohamed BERRAJAA, Abdesslam AYOUIJIL</i>
11 :30	Non-isomorphic generation of fractional factorial designs. <i>Bouchra EL BOUJDAINI*, Driss DRIOUCHI</i>	On Galerkin's type approximation for elliptic equations in Musielak spaces <i>Youssef AHMIDA*, Ahmed YOUSSEFI</i>	Continuous Data Assimilation & feedback control of Humain brain tumor growth. <i>Abderrahim AZOUANI*, Bajil OUARTASSI</i>	On the vehicle routing problem with uncertain service and travel times. <i>Imad HAFIDI, Abdelmoutalib METRANE, Mehdi NASRI*</i>

12:15—13:15

Lunch

15:00—16:00

Plenary Lecture
Professor BRILLARD Alain
Chairman : Hassan EL AMRI

Amphi FSTH

Solving the Timoshenko transverse vibrating equations using the Normalized Uniform Spline Approximation.	<i>Mohamed ADDAM, Farah EL GHOULBZOURI*</i>
Select Pertinent Features by Evolutionary Algorithm: Application in clustering.	<i>Ahmad EL ALLAOUI</i>
Grid adaption promotion of finite volume solutions to the shallow water equations with shock capturing schemes.	<i>Hind TALBI*, Najim SALHI, Imad ELMAHI</i>
Superconvergent integro cubic spline quasi-interpolants.	<i>Ahmed BOUJRAF*, Driss SBIBIH, Mohamed TAHRICHI, Ahmed TIJINI</i>
XEW2.0-A Big Data Analytics tool for Competitive Intelligence.	<i>Amine EL HADDADI*, Anass EL HADDADI</i>
Applying Blind source separation in Text mining.	<i>Abdelghani GHAZDALI*, Imad HAFIDI, Abdelmoutalib METRANE, Amal OURDOU</i>
Accuracy and stability of local Radial Basis Function method for the numerical simulation of elastic structure problems.	<i>Zouhair SAFFAH, Abdelaziz TIMESLI*, Abderrahim AZOUANI, Hassan LAHMAM</i>
Automotive Health - A Systematic Overview of opprtonities & boundaries.	<i>Mustapha ADDAM*, David MATUSIEWICZ</i>
Some existence and uniqueness results for impulsive differential equations with delay.	<i>Halimi BERREZOUG</i>
Solving singular Love's integral equation by using product integration method	<i>Domingo BARRERA, Fadila EL MOKHTARI*, Driss SBIBIH</i>

	Session 16 : Salle C Chairman : Fouzia MORADI	Session 17 : Salle B Chairman : Mohammed SEAÏD	Session 18 : Salle A Chairman : Mohammed HEYOUNI
17 :00	Properties (gt), (gb) and (gab) for f(T) type operator II. <i>Adel Babbah*, Mohammed Zohry, Fatima Babbah.</i>	High order splitting method for Burgers equation with viscosity. <i>Salaheddine MAAQOUL*, Hassan BELHADJ</i>	Successive over-relaxation method and fixed-point technique in finite flexible porous journal bearings. <i>Anas SAKIM*, Mohamed NABHANI, Mohamed EL KHLIFI</i>
17 :20	On a nonlinear eigenvalue problem for generalized Laplacian in Orlicz-Sobolev spaces. <i>Ould Khatri Mohamed Mahmoud*, Ahmed Youssfi</i>	Identification of separable source for a seawater intrusion problem in costal aquifers. <i>Soumia SLIMANI*, Khalid NAJIB, Ibtissam MEDARHRI, A. ZINE</i>	Efficient preconditioning techniques and iterative solvers for nearly incompressible elasticity problems with contact constraints <i>Abderrahman El Maliki</i>
17 :40	Nonlinear algebraic systems with a weight. <i>Mohamed OUSBIKA*, Zakaria EL ALLALI</i>	Explicit meshless method for computing shallow water flows using an artificial viscosity. <i>Elmiloud CAABELASRI *, Mohammed JEYAR</i>	The state fractional spatial derivative stabilization of semilinear distributed systems. <i>Hanaa ZITANE*, Rachid LAGHRISSE, Ali BOUTOULOUT</i>

Sturday, October 20, 2018

09 :00—10 :00

Plenary Lecture

AMPHI FSTH

Professor RHANDI Abdelaziz
Chairman : El Houssine AZROUL

10 :00—10 :30

Coffee Break

10 :30—12 :10

Parallel Sessions

	Session 19 : Salle B Chairman : Ahmad EL ALLAOUI	Session 20 : Salle C Chairman : Carole ROSIER	Session 21 : Salle A Chairman : Abderrahim EL ALLATI
10 :30	ACO-FFDP a new Incremental Clustering for Big Data Analytics. <i>Fadwa BOUHAFER*</i> , <i>Anass El Haddadi</i> , <i>Mohammed Heyouni</i>	Survey on Bundle Methods for Non smooth Optimization. <i>Saad BOUKHROUF*</i> , <i>Abdessamad JADDAR</i> , <i>Mourad TAJ</i>	Reject inference in credit scoring using Semi-supervised Multidimensional HMM based on Baum-Welch algorithm. <i>Monir EL ANNAS*</i> , <i>Mohamed OUZINEB</i> , <i>Badreddine BENYACOUB</i>
10 :50	Laboratory as a Service (LaaS): A paradigm for the development and automatic regeneration of user interfaces for remote laboratories. <i>Fatima CHEDI</i>	Regularized Minimization of Convex Functions in Radon Nikodym Spaces. <i>Nourddin SAIDOU*</i> , <i>Mohammed ZINEDDINE</i> , <i>Bouchaib FERRAHI</i>	Encryption and decryption of images using the elliptic curve over ring <i>Abdelhamid TADMORI</i>
11 :10	Big Data for optimizing a university's training offer. <i>Mouhcine SABRI*</i> , <i>Jaber EL BOUHDIDI</i> , <i>Mohamed Yassin CHKOURI</i>	Fixed point theorem satisfying cyclical conditions in b-Menger spaces <i>Abderrahim MBARKI</i> , <i>Rachid OUBRAHIM*</i>	Contribution to the road safety in the smart cities: counting and classification of the vehicles in the carriageway by using the Artificial intelligence. <i>Abdelghani IBNOULAFKIH*</i> , <i>Salaheddine KHAMLICH</i> , <i>Mohamed BENRABH</i>
11 :30	A comparison of machine learning methods for customer churn prediction in email marketing. <i>Redouan ABAKOUY*</i> , <i>Anass EL HADDADI</i> , <i>El Mokhtar EN-NAIMI</i>	On numerical optimization methods for vector functions <i>Saad BOUKHROUF</i> , <i>Abdessamad JADDAR</i> , <i>Mourad TAJ*</i>	Fluidification of Petri net <i>Nabil BENAYA*</i> , <i>Nabil EL-AKCHIOUI</i> , <i>Taoufik EL MOURABITE</i>

12 :15

Closing

12 :30

Lunch

15 :00

Excursion and visit to Al Hoceima City