

The 30th International Conference of the Jangjeon Mathematical Society (ICJMS'2017 is a great manifestation which will provide international visibility for the Faculty of Mathematics of the University of Sciences and Technology Houari Boumediene (Algeria). This meeting allows young researchers to meet, discuss research findings, exchange ideas, and learn about recent advances in mathematics. This meeting also provides an opportunity for research laboratories to present their activity programs and build relationships with the economical institutions.

Sponsored by :



ICJMS'2017

Program

30th International Conference
**of the Jangjeon
Mathematical Society**
Pure and Applied Mathematics

University of Sciences and Technology
Houari Boumediene
Faculty of Mathematics
12-15 July 2017



**Full Program of
The 30th International Conference
of The Jangjeon Mathematical Society, July 12-15, 2017
(ICJMS2017)**

Wednesday, July 12, 2017	
08:00 - 09:00	Registration
09:00 - 10:00	Opening Ceremony
10:00 - 11:00	Plenary Conference 1: Conference Room <p style="text-align: center;">Seog-Hoon Rim Special Numbers arising from Non-linear Differential Equations (Differential Equations for p:q-Touchards Polynomials) Chair: Chandrashekar Adiga</p>
11:00 - 11:30	Coffee Break
11:30 - 12:30	Plenary Session 2: Conference Room <p style="text-align: center;">Yilmaz Simsek p-adic q-integrals approach to uniformly differentiable functions and their applications including special numbers and polynomials Chair: Abdelmejid Bayad</p>
12:30 - 14:00	Lunch Break
14:00 - 16:00	Parallel Sessions
Session ``Numerical Analysis and Partial Differential Equations'', Chair: Boukari Dahbia Room A	
14:00 - 14:30	Abderrahim Kacimi, Boualem Khouider , Existence and uniqueness of classical solutions for all time for the ϵ -plane barotropic equations in a 2d channel
14:30 - 15:00	Noura Djedaidi, Fatma Zohra Nouri , Numerical simulation for two phase flow in heterogeneous porous media
15:00 - 15:30	Helmi Temimi, Mohamed Ben Romdhane , Two-branched numerical solution of Bratu's problem
15:30 - 16:00	Walid Merniz, Rachida Djouadi, Tahar Zamene Boulmezaoud , Inverted finite element method to a free-surface flow over an obstacle
Session ``Optimization 1'', Chair: Ouafi Rachid Room B	
14:00 - 14:30	Assma Leulmi, Bachir Merikhi , Méthode barrière logarithmique via les fonctions minorantes pour la programmation linéaire
14:30 - 15:00	Fouzia Ghellab, Mohand Ouamer Bibi, Samia Medjdoub , Algorithm for solving an optimal control quadratic problem with a free initial condition
15:00 - 15:30	Laouzai Abdelfettah, Rachid Ouafi , Traffic assignment problem with environmental criterions
15:30 - 16:00	Norredine Medjouti, Brahim Oukacha, Yacoub Salhi , Optimisation des réseaux de contraintes qualitatives temporelles

Session ``Combinatorics'', Chair: Mourad Rahmani		Room C
14:00 - 14:30	<u>Rahime Dere</u> , The umbral calculus applications of some special polynomials	
14:30 - 15:00	<u>Siham Mokhfi</u> , Formule de trace pour anneaux de Witt	
15:00 - 15:30	<u>Taras Goy</u> , New identities for Padovan numbers via the determinants of the Toeplitz-Hessenberg matrices	
15:30 - 16:00	<u>Mourad Rahmani</u> , <u>Mohamed Amine Boutiche</u> , Some results on Frobenius-type Eulerian polynomials	
Session ``Queuing Theory 1'', Chair: Sadki Ourida		Room D
14:00 - 14:30	<u>Nizar Mannai</u> , Optimal time of replacement for a parallel system in random environment	
14:30 - 15:00	<u>Soumaya Ghnimi</u> , Reliability parameters estimations of a parallel system under imperfect repair	
15:00 - 15:30	<u>Badredine Issaadi</u> , <u>Karim Abbas</u> , <u>Djamil Aïssani</u> , Weak stability for truncation approximations of invariant measures, with application to queueing.	
15:30 - 16:00	<u>Djamila Zirem</u> , <u>Mohamed Boualem</u> , <u>Djamil Aïssani</u> , Unreliable Retrial Queue with Single Server Batch Arrival and Impatient Customers	
16:00 - 16:30	Coffee Break	
16:30 - 18:00	Parallel Sessions	
Session ``Partial Differential Equations 1'', Chair: Lemrabet Keddour		Room A
16:30 - 17:00	<u>Nadia Bengouga</u> , <u>Fadila Bentalha</u> , Corrector results for a parabolic problem in a highly rarefied binary structure of general periodic shape	
17:00 - 17:30	<u>Athmane Abdallaoui</u> , <u>Keddour Lemrabet</u> , Mechanical impedance of a thin layer in asymmetric elasticity	
17:30 - 18:00	<u>Louiza Merzougui</u> , <u>George Griso</u> , The unfolded limit problem for diffusion process	
Session ``Ordinary Differential Equations / Dynamic Systems 1'', Chair: Benzekri Tounsia		Room B
16:30 - 17:00	<u>Djamila Djedid</u> , <u>Amar Makhoulouf</u> , Zero-hopf bifurcation in the generalized michelson system	
17:00 - 17:30	<u>Safia Henine</u> , <u>Salem Abdelmalek</u> , <u>Amar Youkana</u> , Boundedness of solutions for a Gierer-Meinhardt system with three equations	
17:30 - 18:00	<u>Mohamed Amine Zemirni</u> , <u>Benharrat Belaïdi</u> , Linear differential equations with fast-growing coefficients in complex plane	
Session ``Commutative Algebra'', Chair: Mustafa Alkan		Room C
16:30 - 17:00	<u>Abdelmalek Mohammed</u> , A flux formula on weighted manifolds	
17:00 - 17:30	<u>Brahim Benzeghli</u> , Construction de l'1-champs géométrique P erf des complexes parfaits	
17:30 - 18:00	<u>Mustafa Alkan</u> , <u>Ortaç Önes</u> , The Zariski subspace topologies associated with an ideal	
Session ``Financial Mathematics'', Chair: François Dupuy		Room D
16:30 - 17:00	<u>Abdelkader Ameraoui</u> , <u>Kamel Boukhetala</u> , <u>Dupuy Jean-François</u> , Bayesian inference on lpc model under right censorship	
17:00 - 17:30	<u>Ahlem Djebar</u> , <u>Riad Remita</u> , <u>Halim Zeghdoudi</u> , Around multivariate credibility	
17:30 - 18:00	<u>Zaineb Mezoud</u> , <u>Remita Mohamed Riad</u> , Volatility and financial forecast with black-scholes made easy software	

Thursday, July 13, 2017

08:30 - 09:30	Plenary Session 3: Ekrem Savas Double Lacunary Statistical Convergence in Topological Groups Via Ideal Chair: Badawi Ayman	Conference Room
09:30 - 10:30	Plenary Session 4: Benali Benzaghrou Algèbre de Hurwitz et calcul ombral classique Chair: Yilmaz Simsek	Conference Room
10:30 - 11:00	Coffee Break & Poster Session	
11:00 - 12:30 Parallel Sessions		
Session ``Partial Differential Equations 2'', Chair: Boualem Alleche		Room A
11:00 - 11:30	<u>Belkacem Bekhiti</u>, Abdelhakim Dahimene, George Fragulis , On block zeros in a second order system of partial differential equations	
11:30 - 12:00	<u>Berkani Amirouche</u>, Kelleche Abdelkarim , Existence and uniform stabilization for a viscoelastic translational Euler-Bernoulli beam	
12:00 - 12:30	<u>Boualem Alleche</u> , Browder-Hartman-Stampacchia variational inequalities revisited and applications	
Session ``Multiobjective Optimization 1'', Chair: Chaabane Djamel		Room B
11:00 - 11:30	<u>Adiche Chahrazad</u>, Méziane Aïder , A hybrid method to solve the multi-objective winner determination problem	
11:30 - 12:00	<u>Asma Boumesbah</u>, Mohamed El-Amine Chergui , An exact method to solve the multi-objective minimum spanning tree problem	
12:00 - 12:30	<u>Chaabane Djamel</u>, Mebrek Fatma , Stochastic discrete multiple objective	
Session ``Ordinary Differential Equations / Dynamic Systems 2'', Chair: Bebbouchi Rachid		Room C
11:00 - 11:30	<u>Wafiya Boukrouk</u>, Dalila Azzam-Laouir , Differential equations in a metric space	
11:30 - 12:00	<u>Sabrina Izza</u>, Dalila Azzam-Laouir , Existence result for a perturbed nonconvex sweeping process	
12:00 - 12:30	<u>Wissame Selmani</u>, Ilham Djellit , Etude du plan de phase d'un difféomorphisme de type henon	
Session ``Inference 1'', Chair: Djaballah Khedidj		Room D
11:00 - 11:30	<u>Khaoula Boudjerda</u>, Assia Chadli, Asma Meradji , Bayesian estimation of the Rayleigh distribution under different loss function	
11:30 - 12:00	<u>Meriem Bensalloua</u>, Kamel Boukhetala, Karim Benhenni , The effect of survival function on an estimator of a pharmacokinetic problem	
12:00 - 12:30	<u>Mohamed Sadoun</u>, Mohamed Bentarzi , Efficient estimation in periodic integer-valued autoregressive (pinar(1)) model, semi-parametric case	
12:30 - 14:00	Lunch Break	

14:00 -15:00	Plenary Session 5 : Chandrashekar Adiga Ramanujan-type congruences for ℓ -regular partitions Chair : Benzaghrou Benali	Conference Room
15:00 - 16:30	Parallel Sessions	
Session `` Partial Differential Equations 3'', Chair: Moulay Mohamed Saïd		Room A
15:00 - 15:30	Didi Hana, Abdelkrim Moussaoui, Brahim Khodja , Singular quasilinear elliptic systems with (sub-, super-) homogeneous condition	
15:30 - 16:00	Mohamed Berbiche , On the global solvability and blow-up of solutions to certain evolution equations	
16:00 - 16:30	Mohamed Kerek, Khaled Zennir , Energy decay of solution to plate equation with memory in \mathbb{R}^n	
Session ``Graphs 1'', Chair: Semri Ahmed		Room B
15:00 - 15:30	Fatma Tammal, Méziane Aïder , An exact method for the sum chromatic number	
15:30 - 16:00	Ibrahim Boufelgha, Isma Bouchemakh, Meriem Moulay , Broadcast domination in complementary prisms	
16:00 - 16:30	Hillal Touati, Pierre Coupechoux, Julien Moncel, Ahmed Semri , On code identifying tournament vertices	
Session ``Number Theory 1'', Chair: Hernane Mohand Ouamar		Room C
15:00 - 15:30	Abdelaziz Bellagh , On p -adic Julia sets	
15:30 - 16:00	Ahmed Chaïa , Estimation de la fonction de Tchebychef	
16:00 - 16:30	Aykut Ahmet Aygunes , Remarks on the polynomials associated with harmonic numbers	
Session `` Functional Analysis 1'', Chair: Aïssa Naïma		Room D
15:00 - 15:30	Nadjet Abada , Existence results for a system of integral equations which is a perturbation of a system of the Gripenberg's type	
15:30 - 16:00	Ghania Benhamida, Mahmoud Bousseïsal , Existence of minimizers of a non-convex functional	
16:00 - 16:30	Katia Bachi, Karim Abbas , Functional analysis of Markov reliability models using Taylor series	
16:30 - 17:00	Coffee Break & Poster Session	
17:00 - 18:30	Parallel Sessions	
Session `` Partial Differential Equations 4'', Chair: Boutarène Mohamed Ghaouti		Room A
17:00 - 17:30	Samira Beyoud, Dahbia Hernane Boukari , Free surface flow over an obstacle	
17:30 - 18:00	Selwa Chennouf, Fadila Bentalha , Diffusion Process in a highly rarefied multi-structures	
18:00 - 18:30	Nesrine Kamouche, Abdallah Benaïssa , Les développements asymptotiques des intégrales doubles et la méthode de Laplace	
Session `` Optimization 2'', Chair: Benyahia Tani Nesrine		Room B
17:00 - 17:30	Nedjmeddine Kantour, Sadek Bouroubi , Cryptanalysis of Merkle-Bellman cipher using parallel genetic algorithm	
17:30 - 18:00	Lilial Lassac, Brahim Oukacha, Lakhdar Sais , La rupture de symétries dans le problème d'emballage de sphères	

Session ``Complex Analysis'', Chair: Kessi Arezki		Room C
17:00 - 17:30	<u>V. Husna</u> , P. Waghmore Harina, Results on uniqueness of product of certain type of difference polynomials	
17:30 - 18:00	<u>S. Rajeshwari</u> , P. Waghmore Harina, Value distribution and uniqueness of certain types of difference polynomials	
18:00 - 18:30	<u>Ramya Maligi</u> , P. Waghmore Harina, Uniqueness problems of difference-differential polynomials sharing one value of entire functions	
Session ``Queuing Theory 3'', Chair: Tayeb Lardjane		Room D
17:00 - 17:30	<u>Farouk Metiri</u> , Credibility premiums under the weighted balanced loss function and the Esscher principle	
17:30 - 18:00	<u>Imad Rezzoug</u> , Abdelhamid Ayadi, La méthode des sentinelles à l'identification des pollutions dans un Lac	
18:00 - 18:30	<u>Chouh Meriem</u> , Boukhetala Kamel, Hanafi Mohamed, La factorisation semi non négative pour le clustering	

Friday, July 14, 2017

08:00 - 09:00	Plenary Session 6: <p style="text-align: center;">Badawi Ayman Recent progress on n-absorbing ideals of commutative rings Chair: Taekyun Kim</p>	Conference Room
09:00 - 10:30 Parallel Sessions		
Session ``Partial Differential Equations 5'', Chair: Zaïr Ouahiba		Room A
09:00 - 09:30	S. E. Rebiaj, W. Ghecham, F. Z. Sidi Ali , Stabilization of the wave equation with a delay term in the nonlinear boundary feedback	
09:30 - 10:00	Saida Cherfaoui, Amor Kessab, Arezki Kheloufi , Study of a 2m-order parabolic equation in non-cylindrical domains of \mathbb{R}^{n+1}	
10:00 - 10:30	Saida Sandel, Amel Berhail, Mohamed Ali Ayadi , Identification of the pollution term by the average approximate sentinel	
Session ``Graphs 2'', Chair: Benméziane Zineb		Room B
09:00 - 09:30	Saliha Ouatiki, Mohamed Bouzefrane , Global offensive alliances in cactus graph	
09:30 - 10:00	Ainouche Amina, Bouroubi Sadek , The contamination game of grid $G(m,n)$	
10:00 - 10:30	Meriem Akli, Méziane Aïder , The graph distance using the maximum common subgraph	
Session ``Ordinary Differential Equations / Dynamic Systems 3'', Chair: Dali Dahira		Room C
09:00 - 09:30	Nawal Mellahi, Amel Boufoul, Amar Makhoulf , Small amplitude limit cycles of polynomial Lienard systems	
09:30 - 10:00	Amira Makhoulf, Dalila Azzam-Laouir , Delay perturbed sweeping process	
10:00 - 11:30	Chems Eddine Arroud, Giovanni Colombo, Tahar Haddad , A controlled sweeping process with a perturbation	
Session ``Inference 2'', Chair: Medkour Tarek		Room D
09:00 - 09:30	Qais Mustafa Abdulqader , Forecasting of the annual rain precipitation by using a statistical hybrid method	
09:30 - 10:00	Redhouane Frihi, Abdelaziz Rassoul , Estimators and bootstrap confidence intervals for ruin probability in infinite time for heavy right tailed losses	
10:00 - 10:30	Mohamed Aymen Méziane, Tarek Medkour , Penalized quantile periodogram for times series analysis	
10:30 - 11:00	Coffee Break & Poster Session	
11:00 - 12:30 Parallel Sessions		
Session ``Partial Differential Equations 6'', Chair: Hamroun Djamilia		Room A
11:00 - 11:30	Mustapha Meghnafi , Existence results for a p Laplacian equation with constant yield harvesting	
11:30 - 12:00	Abdessalem Benterki, Mohamed Rouaki , Existence of solutions for perturbed Dirichlet problem via fixed point method	
12:00 - 12:30	Tahir Boudjeriou, Arezki Kheloufi , On a robin boundary value problem for the heat equation in unbounded non-cylindrical domains	

Session ``Multiobjective Optimization 2'', Chair: Abbas Moncef		Room B
11:00 - 11:30	<u>Larbi Asli, Méziane Aïder</u> , Modeling and solving a dynamic winner determination problem under three real objectives	
11:30 - 12:00	<u>Malika Daoud, Djamal Chaabane</u> , A Cooperative Method-reduction size and resolution of Binary Bi-Objective Knapsack Problem	
12:00 - 12:30	<u>Samira Bokhari, Méziane Aïder</u> , Robust multiobjective portfolio optimization	
Session ``Number Theory 2'', Chair: Rezaoui Mohamed Salem		Room C
11:00 - 11:30	<u>Irem Kucukoglu, Yilmaz Simsek</u> , Combinatorial applications of the generating functions to the lyndon words	
11:30 - 12:00	<u>M. S. Mahadeva Naika, S. Shivaprasada Nayaka</u> , Some new congruences for Andrews' singular overpartition pairs	
12:00 - 12:30	<u>Mouloud Goubi</u> , On the Baez-Duarte-Balazard criterion for the Riemann hypothesis	
Session ``Functional Analysis 2'', Chair: P. Waghmore Harina		Room D
11:00 - 11:30	<u>Massinissa Soufit, Karim Abbas</u> , The Taylor series expansion for the inventory management system	
11:30 - 12:00	<u>P. Waghmore Harina</u> , Uniqueness of $p(f)$ and $p[f]$ of entire and meromorphic functions that share one small function	
12:00 - 12:30	<u>Karim Cherifi, K. Hariche</u> , Minimal realization of mimo linear systems using Hermite form	
12:30 - 14:00	Lunch Break	
14:00 - 19:00	EXCURSION	

Saturday, July 15, 2017

08:30 - 09:30	Plenary Session 7: <p style="text-align: center;">Abdelmejid Bayad I-functions and Dedekind sums theory</p> Chair: Méziane Aïder	Conference Room
09:30 - 11:00 Parallel Sessions		
Session "Partial Differential Equations / Optimization", Chair: Teniou Djamel Eddine Room A		
09:30 - 10:00	Maroua Mezghiche, Z. Benhammadi, N. Djeghaba , Convergence of epsilon steepest descent method on the submanifolds of R^n	
10:00 - 10:30	Abdelkader Dellal , Soliton in Generalized Sobolev Space : Derrick's Problem with twice variable exponent	
10:30 - 11:00	Abdelkader Laiadi, Abdelkarim Merzougui , Free surface flows over a trapezoidal obstacle with surface tension and gravity	
Session "Multiobjective Optimization 3", Chair: Moulaï Mustapha Room B		
09:30 - 10:00	Samira Bokhari, Meziane Aïder , Robust multiobjective knapsack problem	
10:00 - 10:30	Wissem Achour, Djamel Chaabane , Computing Omega Invariant of Numerical Semigroups using Integer Optimization Techniques	
10:30 - 11:00	Lachemi Nadia, Chaabane Djamel , New approach to solve the 0/1 bicriteria knapsack problem	
Session "Cryptography", Chair: Bouroubi Sadek Room C		
09:30 - 10:00	Fatiha Saadallah, Kenza Guenda , Elliptic curve cryptosystem over gaussian integer	
10:00 - 10:30	Zineb Hebbache, Kenza Guenda , Self-dual skew codes over $\mathbb{F}_q + u\mathbb{F}_q$	
Session "Queuing Theory 2", Chair: Tatachak Abdelkader Room D		
09:30 - 10:00	Lala Maghnia Alem, Mohamed Boualem, Djamil Aissani , Monotonicity properties of m/g/1 retrial queues with two-way communication and n types of outgoing calls	
10:00 - 10:30	Mohamed Boualem , Stochastic comparability bounds for the performance measures of an $M_2/G_2/1$ retrial queue and priority customers	
10:30 - 11:00	Nawel Arrar Remita, Lamia Derrouiche, Natalia Djellab , M/G/1 retrial queue with priority customers and general retrial times	
11:00 - 11:30	Coffee Break	
11:30 - 12:30	Special Session	Conference Room
Round Table Discussion		
12:30 - 13:00	Closure Ceremony	

Thursday, July 13, 2017

Thursday, July 13, 2017	
Chair: Yagouni Mohamed	Poster Session 1: Library, Bloc B
10:00-11:00	<p>Abderrahmane Malki and Kamal Boukhetala. Two News Approximations to Standard Normal Distribution Function</p> <p>Assia Menni and Djamel Chaabane. A Possibilistic Approach to solve a MOLP problem with fuzzy coefficients</p> <p>Saida Sandel, Amel Berhail, Abdelhamid Ayadi, Identification of the pollution term by the average approximate sentinel</p> <p>Baya Takhedmit, Karim Abbas and Sofiane Ouazine. Sensitivity analysis of performance measures of the GI/M/1/N queue with vacations</p> <p>Boutana Imen and Laouir Dalila. Second-order differential inclusions with Pseudo-Lipschitz right-hand sides</p> <p>Chouaib Khattou. QUELQUES CONGRUENCES SUR LES NOMBRES DE BERNOULLI D'ORDRES SUPERIEURS</p> <p>Louiza Soltane, Djamel Meraghni and Abdelhakim Necir. STATISTICAL ESTIMATE OF THE PROPORTIONAL HAZARD PREMIUM OF LOSS UNDER RANDOM CENSORING</p>
	Poster Session 2: Bloc CAM
16:00-17:00	<p>Imane Dekkar, Nouressadat Touafek and Yasin Yazlik. On the global behavior of a third-order rational system of difference equations with periodic coefficient</p> <p>Islem Ghaffor. An equivalent problem to the Collatz conjecture</p> <p>Kelleche Abdelkarim and Berkani Amirouche. Existence and stabilization of equation of an Axially moving Kirchhoff string with delay</p> <p>Khaled Boukerrioua and Imen Meziri. Explicit Bounds on Some Integral Inequalities on Time Scales and Application</p> <p>Leila Ait Kaki. SOME RESULTS FOR A FIXED POINT THEORY IN BANACH ALGEBRAS</p> <p>Malik Belaid and Abdelwaheb Ardjouni. Stability in totally nonlinear neutral dynamic equations by krasnoselskii's- burton theorem on time scales</p> <p>Debbabi Djamel and Makhlouf Ammar. Periodic solutions of some classes of third-order differential equations</p> <p>Fatima Zohra Attoui and Halim Zeghdoudi. Estimation de Bayes d'une distribution de gamma Lindley</p> <p>Mohamed Hariri. THE STABILITY OF SOME DEGENERATE DIFFERENTIAL EQUATIONS IN HILBERT SPACES</p>

Friday, July 14, 2017

Poster Session 3: Library, Bloc B

10:00-11:00

- Mouder Benseghir, Fatma Zohra Nouri and Pierre Clovis Tauber.** A new algorithm for Image inpainting
- Nabila Haddad and Julius Fergy T Rabago.** Dynamics of a system of k-difference equations
- Nadjiba Foukroun, Dahbia Hernane Boukari and Rachida Ait Yahia Djouadi.** A three dimensional free surface flow problem over an obstacle
- Ramdani Nedjem Eddine and Abdelaziz Mennouni.** A note on solving a class of second-order integro-differential equations
- Salah Berrouane.** EDGEWORTH EXPANSION AND SMOOTHNESS
- Samira Dehaimi and Hadji Mohamed Lakhdar.** EXTREM VALUE THEORY
- Soltani Norelhouda.** EXISTENCE RESULT OF A CLASS OF INFINITE SEMIPOSITONE P-LAPLACE SYSTEMS WITH FALLING ZEROS
- Soumia Saidi, Lionel Thibault and Mustapha Yarou.** On a time-dependent subdifferential evolution inclusion with a single-valued perturbation
- Yazid Benkanoun and Djamel Chaabane.** OPTIMISATION VIA THE CHOQUET INTEGRAL ON THE PARETOOPTIMAL SHORTEST PATHS SET
- Nesrine Kamouche and Abdallah Benaissa** NOUVEAUX RESULTATS SUR LE DEVELOPPEMENT ASYMPTOTIQUE DES INTGRALES
- Lamia Lakaour, Djamil Aissani and Karima Adelaissanou.** M/M/1/N RETRIAL QUEUE WITH COLLISIONS, TRANSMISSION ERRORS WITH SERVER WHICH MAKES OFF TO CONSERVE ENERGY
- Sara Leulmi and Fatiha Messaci.** ESTIMATION LOCALE LIN EAIRE DE LA FONCTION DE REGRESSION G EN ERALIS EE POUR DES DONN EES FONCTIONNELLES ET D EPENDANTES