

Patrick Tardivel

General informations

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Education and qualifications

- **2006-2007:** Bachelor degree in mathematics, Montpellier 2 university.
- **2010:** I obtained the "CAPES de mathématiques", a French competitive examination to become teacher in secondary education.
- **2013:** I obtained the "agrégation en mathématiques", the highest French competitive examination to become teacher in secondary education or in the "classes préparatoires aux grandes écoles", master degree in mathematics and teaching.
- **2013-2014:** Master degree in statistics and probability, research period with Béatrice Laurent, my memory is entitled. "Test d'indépendance d'un vecteur gaussien en grande dimension".
- **2014-2017:** PhD in applied mathematics. My thesis is entitled "Sparsest representation and multiple testing procedures: application to metabolomics". I defended my thesis on November 24th. Members of my thesis committee are:
Didier Concordet (supervisor), Magalie Fromont, Béatrice Laurent (president), Holger Rauhut (examiner), Jérôme Saracco, Rémi Servien (co-supervisor), Sara van de Geer (examiner).

Secondary teacher

- **2007-2008:** Contractual teacher at la garriguette junior high school in Vergèze.
- **2008-2009:** Contractual teacher at Dhuoda senior high school in Nîmes.
- **2010-2011:** Teacher at René Gosse senior high school in Clermont l'Hérault.
- **2011-2012:** Teacher at La Dullague junior high school in Béziers.
- **2013-2017:** I gave oral examinations in "classe préparatoire aux grandes écoles" at Fermat in Toulouse.

Teacher in higher education

2014-2017: Doctorate contractual teacher at Paul Sabatier university:

- Mathematics courses in L1 (138h)
- Linear regression courses in L3 (30h)
- Laboratorium in L3 (6h)
- Laboratorium in M1 (17h)

February 2018-June 2018: Invited teacher at the Mathematics Institute of Wrocław

- Laboratorium in M1 (30h)
- Compressed sensing course in M1 (30h)

Publications

- **PJC. Tardivel**, R. Servien, D. Concordet. Sparsest representations and approximations of an underdetermined linear system, *Inverse Problems*.
- **PJC. Tardivel**, C. Canlet, G. Lefort, M. Tremblay-Franco, L. Debrauwer, D. Concordet, R. Servien. ASICS : an automatic method for identification and quantification of metabolites in complex 1D H NMR spectra, *Metabolomics*.
- Y. Guitton, M. Tremblay-Franco, G. Le Corguillé, JF. Martin, M. Pétéra, P. Roger-Mele, A. Delabrière, S. Goultquer, M. Monsoor, C. Duperier, C. Canlet, R. Servien, **PJC. Tardivel**, C. Caron, F. Giacomoni, EA. Thévenot. Create, run, share, publish, and reference your LC-MS, and NMR data analysis workflows with Workflow4Metabolomics 3.0, the Galaxy online infrastructure for metabolomics, *The International Journal of Biochemistry & Cell Biology*.

Preprints

- **PJC. Tardivel**, R. Servien, D. Concordet. Simple expression of the LASSO and SLOPE estimators in small dimension, submitted.
- G. Lefort, L. Liaubet, C. Canlet, **PJC. Tardivel**, MC Père, H. Quesnel, A. Paris, N. Iannuccelli, N. Vialaneix, R. Servien, ASICS: an R package for a whole analysis workflow of 1D 1H NMR spectra, submitted

Oral communications

With peer review

- **PJC. Tardivel** Sparsest solutions and approximate solutions of a linear system. 31th european meeting of statisticians, Helsinki, 27 July 2017.
- **PJC. Tardivel** A powerful multiple testing procedure in linear Gaussian model. 31th european meeting of statisticians, Helsinki, 27 July 2017.
- **PJC. Tardivel**, R. Servien, C. Canlet, L. Debrauwer, M. Tremblay-Franco, D. Concordet. Contrôle de la Familywise error rate. Application en métabolomique. 48th French statistics society conference, Montpellier, 30 May 2016.
- **PJC. Tardivel**, R. Servien, C. Canlet, L. Debrauwer, M. Tremblay-Franco, D. Concordet. Identification and quantification of metabolites in NMR spectrum. 30th european meeting of statisticians, Amsterdam, 10 July 2015.
- **PJC. Tardivel**, R. Servien, C. Canlet, L. Debrauwer, M. Tremblay-Franco, D. Concordet. Identification and quantification of metabolites in NMR spectrum. 47th French statistics society conference, Lille, 4 June 2015.

Seminars

- **PJC. Tardivel**. On properties of sign estimators derived from LASSO and basis pursuit. Mathematics institute of Toruń, Toruń, 6 June 2018.
- **PJC. Tardivel**. On properties of sign estimators derived from LASSO and basis pursuit. Mathematics institute of Warszawa, Warszawa, 17 May 2018.
- **PJC. Tardivel**. Simple expression of the LASSO and SLOPE in small dimension. Mathematics institute of Wrocław, Wrocław, 12 April 2018.
- **PJC. Tardivel**. Sparsest solutions and approximate solution of an underdetermined linear system of equations. Wrocław university of science and technology, Wrocław, 6 April 2018.

- **PJC. Tardivel.** Introduction to compressed sensing: second part. Mathematics institute of Wrocław, Wrocław, 8 March 2018.
- **PJC. Tardivel.** Introduction to compressed sensing. Mathematics institute of Wrocław, Wrocław, 22 February 2018.
- **PJC. Tardivel.** Représentation parcimonieuse et procédures de tests multiples : application à la métabolomique. Seminar of Rennes 2 University, 10 November 2017.
- **PJC. Tardivel.** Identification des composantes non nulles d'un modèle linéaire gaussien. INRA, Toulouse, 19 October 2017.
- **PJC. Tardivel.** Contrôle du FWER pour un modèle linéaire Gaussien : preuves. Multiple testing working group, Toulouse, 22 June 2017.
- **PJC. Tardivel.** Contrôle de la Family-Wise Error Rate (FWER). Application en Métabolomique. Multiple testing working group, Toulouse, 8 June 2017.
- **PJC. Tardivel.** Contrôle de la Family-Wise Error Rate (FWER). Application en Métabolomique. Young statisticians conference, Toulouse, 28 April 2017.
- **PJC. Tardivel.** Contrôle de la Family-Wise Error Rate (FWER). Application en Métabolomique. 7th meeting of young statisticians, Porquerolles, 4 April 2017.
- **PJC. Tardivel, R. Servien, C. Canlet, L. Debrauwer, M. Tremblay-Franco, D. Concordet.** Méthode statistique d'identification et quantification de métabolites dans un spectre RMN. 4th meeting of Metabo-HUB, Lacanau, 28 April 2016.
- **PJC. Tardivel, R. Servien, C. Canlet, L. Debrauwer, M. Tremblay-Franco, D. Concordet.** Identification and quantification of metabolites in NMR spectrum. 6th meeting of young statisticians, parc ornithologique du Teich, 1 September 2015.
- **PJC. Tardivel, R. Servien, C. Canlet, L. Debrauwer, M. Tremblay-Franco, D. Concordet.** Identification et quantification de métabolites dans un spectre RMN. Seminar of young PhD students of the Toulouse veterinary school, Toulouse, 5 February 2015.

Softwares and programming

- ASICS: a freeware that analyses NMR spectra in order to identify and quantify metabolites. This freeware is available online in Galaxy.
- R package ASICS.

Skills

Office automation	Word, PowerPoint, GeoGebra (2D and 3D figure), Latex
Programming	R, Scilab
Languages	French: native language, English: current professional practice

Referees

Professor Bogdan Małgorzata	email: malgorzata.bogdan@uwr.edu.pl
Professor Concordet Didier	email: d.concordet@envt.fr
Professor Laurent Béatrice	email: laurentb@insa-toulouse.fr