

## Lyudmila Grigoryeva

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ADRESSE            Laboratoire de Mathématiques de Besançon  
PROFESSION-    Université de Franche-Comté  
NELLE            UFR des Sciences et Techniques  
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                    F-25030 Besançon cedex, France  
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ADRESSE            18, rue de l'Epitaphe, apt 59  
PERSONELLE    25000 Besançon, France  
                    Tél. : 06 37 47 41 44

ETAT CIVIL        Date de naissance : 30 avril 1984  
                    Lieu de naissance : Mukatchevo (Ukraine)  
                    Nationalité : Ukrainienne  
                    Langues : Ukrainienne, Russe, Anglais, Français  
                    Situation familiale : Mariée

ETUDES ET        **Université Nationale Taras-Chevtchenko de Kiev**  
DIPLOMES        Kiev, Ukraine  
UNIVERSITAIRES

Ph.D., spécialité : Modélisation Mathématique et Méthodes Computationnelles,    **8 juillet 2009**  
    • Département : [Faculté de Cybernétique, Mathématiques Computationnelles](#)  
    • Thèse : Technologies de l'Information dans la Modélisation de la Dynamique des Aimants Libres  
    • Directeurs : [Professeur Serhiy I. Lyashko](#), [Professeur Vasyl' V. Kozoriz](#)

**Université d'Etat de Transcarpatie (Université Nationale d'Oujhorod)**  
Oujhorod, Ukraine

M.S. (Master : Systèmes et Technologies du Contrôle de l'Information),    **juillet 2005**  
[Faculté des Sciences de l'Information](#)  
    • *Magna cum Laude*, Diplôme d'Excellence

B.S. (Licence Informatique),  
[Faculté des Sciences de l'Information](#)    **juillet 2004**  
    • *Magna cum Laude*, Diplôme d'Excellence

DISTINCTIONS    **Schlumberger Foundation Faculty for the Future Fellowship Award**    **2012 - 2013**  
HONORIFIQUES    **Schlumberger Foundation Faculty for the Future Fellowship Award**    **2011 - 2012**

**Université d'Etat de Transcarpatie (Université Nationale d'Oujhorod)**  
Oujhorod, Ukraine

- Bourse d'Excellence du Président de l'Université    **2004 - 2005**
- Bourse d'Excellence du Président de la Faculté    **2002 - 2003**

CURSUS            **Université de Franche-Comté**  
PROFESSION-    Besançon, France  
NELLE

*Post-doctorante*    **octobre 2013 - présent**  
Convention de recherche avec la Région de Franche-Comté (Convention Région No. 2013C-5493)  
Projet "Réservoir Computing : développement en traitement de signaux biomédicaux et en prédiction"  
[UFR des Sciences et Techniques](#)  
[Laboratoire de Mathématiques de Besançon](#)  
Directeur du projet : [Juan-Pablo Ortega](#) - [Chargé de Recherches, CNRS](#)

*Post-doctorante (financée par la Fondation Schlumberger)*    **octobre 2011 - septembre 2013**  
[UFR des Sciences et Techniques](#)

Laboratoire de Mathématiques de Besançon  
Directeur du projet : Juan-Pablo Ortega - Chargé de Recherches, CNRS

**Université Masaryk**  
Brno, République Tchèque

*Post-doctorante (programme de courte durée)*

**octobre 2010 - décembre 2010**

Faculty of Science  
Département de Mathématiques et Statistiques  
Directeur du projet : Professeur Bedrich Puza

**Université Nationale Taras-Chevtchenko de Kiev**  
Kiev, Ukraine

*Chercheur Junior*

**novembre 2009 - décembre 2013**

Institut des Hautes Technologies, Département de Science et Recherche  
Division du Développement Appliqué et de l'Implementation  
Laboratoire de Recherche "Physique et Technologie des Systèmes Mobiles"

*Ingénieur de recherche*

**juin 2008 - juillet 2008**

Département de Science et Recherche, Faculté de Radiophysique  
Laboratoire de Recherche du Complexe Cryogénique

**Université Nationale Vadym-Hetman des Études Économiques de Kiev**  
Kiev, Ukraine

*Assistante*

**octobre 2009 - août 2010**

Faculté de Systèmes et Technologies de l'Information  
Département : Mathématiques Avancées

**Université Nationale Taras-Chevtchenko de Kiev**  
Kiev, Ukraine

*Assistante*

**septembre 2006 - juillet 2007**

Faculté de Cybernétique  
Département : Mathématiques Computationnelles

ACTIVITÉ EDITORIELLE Éditeur invité du International Journal of Computational Economics and Econometrics  
Special issue on "Recent Developments in Forecasting and Macroeconometrics"

PROGRAMMES SCIENTIFIQUES ET SUBVENTIONS DE RECHERCHE

[1] Programme du Laboratoire International de Finance Quantitative, Université Nationale de Recherche "École des Hautes Études en Sciences Économiques" (EHESI), Moscou, Russie, Novembre 2014.

[2] Programme du Laboratoire International de Finance Quantitative, Université Nationale de Recherche "École des Hautes Études en Sciences Économiques" (EHESI), Moscou, Russie, Mars 2014.

[3] Focus Program on Geometry, Mechanics and Dynamics, the Legacy of Jerry Marsden. The Fields Institute, Toronto, Canada, Juillet 2012.

[4] Projet de recherche financé par l'état pour le développement d'applications de l'Université Nationale Taras-Chevtchenko de Kiev No. 08BP052-02 "Développement de la lévitation magnétique pour le transport avec des pertes électriques nulles et suspension sans contact de véhicules basée sur le phénomène de puits de potentiel magnétique" (Numero de contrat : 0109U002142).

[5] Projet scientifique de collaboration Ukraine-Slovaquie : "Modeling and Analysis of Non-traditional Dynamic Systems in Transport" (accord international No. M/34-2008, 27 Mars 2008).

[6] Projet de recherche financé par l'état d'Académie Maritime d'État "Développement de moyens de transport de type retard-accélération basés sur des nouvelles technologies de supraconductivité" (Numero de contrat : 0107U0022798, 27 Octobre 2006).

- PRE-PUBLICATIONS [1] Grigoryeva, L., Ortega, J.-P., Peresetsky, A. 2015. Volatility forecasting using global stochastic financial trends extracted from non-synchronous data. Preprint.
- [2] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2014. Reduction and composite likelihood estimation of non-scalar multivariate volatility models. Preprint.
- [3] Grigoryeva, L., Henriques, J., Larger, L., Ortega, J.-P. 2014. [Optimal nonlinear information processing capacity in delay-based reservoir computers](#). Preprint. 37 pages.
- LIVRES Bauwens, L., Grigoryeva, L., Ortega, J.-P. The Dynamics of Financial Volatility. En préparation.
- PUBLICATIONS [1] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2015. Estimation and empirical performance of non-scalar dynamic conditional correlation models. 67 pages. To appear in *Computational Statistics & Data Analysis*. <http://dx.doi.org/10.1016/j.csda.2015.02.013>
- [2] Gabriel, D., Henriques, J., Comte, A., Grigoryeva, L., Ortega, J.-P., Cretin, E., Haffen, E., Moulin, T., Pazart, L., Aubry, R. 2015. Substitute or complement? Defining the relative place of EEG and fMRI in the detection of voluntary brain reactions. *Neuroscience*, 290, P. 435–444.
- [3] Grigoryeva, L., Henriques, J., Larger, L., Ortega, J.-P. 2014. Stochastic nonlinear time series forecasting using time-delay reservoir computers: Performance and universality. *Neural Networks, Volume 55*, P. 59–71.
- [4] Grigoryeva, L., Ortega, J.-P. 2014. Hybrid forecasting with estimated temporally aggregated linear processes. *Journal of Forecasting, Volume 33*, P. 577–595.
- [5] Grigoryeva, L., Ortega, J.-P. 2014. Asymptotic forecasting error evaluation for estimated temporally aggregated linear processes. À paraître dans *International Journal of Computational Economics and Econometrics*.
- [6] Grigoryeva, L., Ortega, J.-P., Zub, S. 2014. Stability of Hamiltonian relative equilibria in symmetric magnetically confined rigid bodies. *Journal of Geometric Mechanics, Volume 6*, Number 3, P. 373–415.
- [7] Henriques, J., Gabriel, D., Grigoryeva, L., Haffen, E., Moulin, T., Aubry, R., Pazart, L., and Ortega, J.-P. 2014. Protocol design challenges in the detection of awareness in aware subjects using EEG signals. *Clinical EEG and Neuroscience*, doi: 10.1177/1550059414560397.
- [8] Gabriel, D., Comte, A., Henriques, J., Magnin, E., Grigoryeva, L., Ortega, J.-P., Haffen, E., Moulin, T., Pazart, L., Aubry, R. 2013. EEG- and fMRI-based communication tools in disorders of consciousness: which is the most reliable method? *Clinical EEG and Neuroscience*, 44(4), E111. doi: 10.1177/1550059413507209
- [9] Grygor'yeva, L.V. 2008. Dynamical model of a free body in central and non-central physical fields and its Maple-analysis. *Bulletin of the University of Kyiv (Series: Physics and Mathematics)*, 2, Kyiv: P. 61–67. (Ukrainian)
- [10] Grygor'yeva, L.V. 2008. Maple-exploring of a free flywheel suspended by superconductive bearing. *Bulletin of the University of Kyiv (Series: Physics and Mathematics)*, 1, Kyiv: P. 75–80.
- [11] Grigor'eva, L.V., Kozorez, V.V., and Lyashko, S.I. 2007. Capabilities of the system Maple in studying dynamic systems of magnetically interacting free bodies. *Cybernetics and Systems Analysis, Volume 43, N. 6*, Springer New York: P. 912–916.
- [12] Kozoriz, V.V., Lyashko, S.I., Tkachenko, R.L., Grigoryeva, L.V. 2007. Maple-exploring of superconductive levitation in circle-dipole system (MPW in dipole due to circle). *Journal of Applied and Computational Mathematics*, 1(94), P. 48–55.
- [13] Grygor'yeva, L.V., Kozorez, V.V., Kozorez, A.V., Lyashko, S.I. 2007. Dynamic problem of two free cylindrical magnets and its Maple-modeling. *Bulletin of the National Academy of Sciences of Ukraine*, 11, Kyiv: P. 41–47. (Ukrainian)
- [14] Grygor'yeva, L.V., Kozorez, V.V., Lyashko, S.I. 2007. Maple-modeling of dynamics for rigid body with fixed point in the field of magnetic and electric forces. *Bulletin of the National Academy of Sciences of Ukraine*, 8, Kyiv: P. 45–48. (Ukrainian)
- CONFÉRENCES, PROCEEDINGS, EXPOSÉS ET SÉMINAIRES RÉCENTS [1] Grigoryeva, L., Henriques, J., Larger, L., Ortega, J.-P. 2015. Reservoir computing: optimal nonlinear information processing capacity, performance, and universality. Applications to stochastic nonlinear time series forecasting. [Journée du Laboratoire de Mathématiques de Besançon](#), France, January, 8.
- [2] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2014. Reduction and composite likelihood estimation of non-scalar multivariate volatility models. [The 8th International conference on Computational and Financial Econometrics \(CFE 2014\)](#), Pisa, Italy, December, 6-8.
- [3] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2014. Reduction and composite likelihood estimation of non-scalar multivariate volatility models. The Weekly Seminar of International Laboratory of Quantitative Finance, National Research University Higher School of Economics, Moscow, Russia, November, 21.
- [4] Grigoryeva, L., Ortega, J.-P., Zub, S. S. 2014. Stability of Hamiltonian relative equilibria in symmetric magnetically confined rigid bodies: orbitrons, levitrons, and generalizations. [The 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications](#), Madrid, Spain, July, 7-11.
- [5] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2014. Estimation and empirical performance of non-scalar

- dynamic conditional correlation (DCC) models. [The 1st Conference of the International Association for Applied Econometrics \(IAAE 2014\)](#), Queen Mary University of London, London, UK, June, 26-28.
- [6] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2014. Non-scalar dynamic conditional correlation models. Estimation and empirical performance. [Conférence “Séries Temporelles, Économétrie et Finance”](#), Besançon, May, 6.
- [7] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2014. Estimation and empirical performance of multivariate non-scalar dynamic conditional covariance and correlation models. [The Weekly Workshop of International Laboratory of Quantitative Finance, National Research University HSE](#), Moscow, Russia, March, 24.
- [8] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2014. Estimation and empirical performance of non-scalar dynamic conditional correlation (DCC) models. [The 8th Bachelier Colloquium on Mathematical Finance and Stochastic Calculus](#), Metabief, France, January.
- [9] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2013. Estimation and empirical performance of non-scalar dynamic conditional correlation (DCC) models. [The 7th International conference on Computational and Financial Econometrics \(CFE 2013\)](#), London, Great Britain, December, 14-16.
- [10] Grigoryeva, L., Henriques, J., Larger, L., Ortega, J.-P. 2013. Stochastic nonlinear time series forecasting using time-delay reservoir computers: performance and universality. Workshop: Experimental Reservoir Computing, Besançon, France, October, 14-15.
- [11] Bauwens, L., Grigoryeva, L., Ortega, J.-P. 2013. Estimation and empirical performance of non-scalar DCC models. [CORE-ILSM Lecture Series](#), Louvain-la-Neuve, Belgium, 30 September – 2 October.
- [12] Grigoryeva, L., Ortega, J.-P. 2013. Estimation of sizeable matrix based DCC models via Bregman divergences. [CEQURA-2013](#), Munich, Germany, September, 23-24.
- [13] Grigoryeva, L., Ortega, J.-P. 2013. Hybrid forecasting with estimated temporally aggregated linear processes. International workshop on Computational Economics and Econometrics, Rome, Italy, June, 12-13.
- [14] Grigoryeva, L., Ortega, J.-P., Zub, S. 2013. Stability of Hamiltonian relative equilibria in symmetric magnetically confined rigid bodies. ICMAT School: [7th International Summer School on Geometry, Mechanics, and Control](#), La Cristalera, Spain, July, 1-5.
- [15] Grigoryeva, L., Ortega, J.-P. 2013. Finite sample forecasting with estimated temporally aggregated linear processes. [The 7th Bachelier Colloquium on Mathematical Finance and Stochastic Calculus](#), Metabief, France, January, 13-20.
- [16] Grigoryeva, L., Ortega, J.-P. 2012. Forecasting with estimated multi-frequency temporally aggregated linear processes. [The 6th International conference on Computational and Financial Econometrics \(CFE 2012\)](#), Oviedo, Spain, December, 1-3.
- [17] Ortega, J.-P., Grigoryeva, L. 2012. Temporal aggregation, forecasting, and path continuation in estimated parametric stochastic models. [3rd Iberoamerican Meeting on Geometry, Mechanics and Control](#), Salamanca, Spain, September, 3-7.
- [18] Grygor'yeva, L. 2012. Non-contact confinement of rigid bodies. [Focus Program on Geometry, Mechanics and Dynamics, the Legacy of Jerry Marsden](#), Toronto, Canada, July.
- [19] Grygor'yeva, L., Ortega, J.-P. 2012. Finite sample forecasting with estimated temporally aggregated linear processes. ICMAT School: [6th International Summer School on Geometry, Mechanics, and Control](#), La Cristalera, Spain, June, 22-26.
- [20] Grygor'yeva, L. 2011. Dynamics and stability of magnetic systems with superconducting elements. DSMSI 2011: [Dynamical System Modeling and Stability Investigation Conference](#), Kiev, Ukraine, May, 25-27.
- [21] Grygor'yeva, L. 2010. [Mathematical modeling of static and dynamic configurations of magnetically inter-acting rigid bodies](#). Seminar On Differential Equations: Masaryk University (Faculty of Science, Department of Mathematics and Statistics), Brno, Czech Republic, November, 15.
- [22] Grygor'yeva, L. 2010. [Dynamics of a flywheel with superconductive bearing based on Magnetic Potential Well \(MPW\) phenomenon](#). ASC 2010: [Applied Superconductivity Conference](#), Washington, USA, August, 4.
- [23] Grygor'yeva, L., Kozorez, V., Fedorchuk, M. 2010. [Modeling of the MPW under condition of superconductivity destruction](#). [The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications](#): Dresden University of Technology, Dresden, Germany, May, 25–28.
- [24] Grygor'yeva, L. 2010. [Dynamics and stability of multibody magnetic systems in Magnetic Potential Well \(MPW\)](#). [The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications](#): Dresden University of Technology, Dresden, Germany, May, 25–28.
- [25] Grygor'yeva, L.V., Kozoriz, V.V. 2008. [Maple-exploring of a free flywheel suspended by superconductive bearing](#). Maglev 2008: Proceedings of [The 20th International Conference on Magnetically Levitated Systems and Linear Drives](#), San Diego, USA, December, 15–18.
- [26] Grygor'yeva, L.V., Kozoriz, V.V., Ljashko, O. 2008. [Maple-exploring of a free flywheel suspended by superconductive bearing](#). SPEEDAM 2008: Proceedings of [The 19th International Symposium on Power Electronics, Electrical Drives, Automation and Motion](#), Ischia, Italy, June, 11–13.
- [27] Grygor'yeva, L.V., Kozoriz, V.V. 2008. On one generalization in two-body problem for motion in central and non-central physical fields. Proceedings of the 9th Crimean International Mathematical

School “Lyapunov Functions Method and Applications”, Alushta, Ukraine, September 15-21. (in Russian)

[28] Grygor'yeva, L.V., Kozoriz, V.V., Tyagulskiy, V.G. 2008. On stability of static and dynamic configurations with a free body in Magnetic Potential Well. Stab08: Proceedings of the 10th International E.S. Pyatnitskiy Symposium “Stability and Vibrations of Nonlinear Control Systems”, Moscow, Russia, June, 3-6. (in Russian)

[29] Grygor'yeva, L.V. 2008. Models of dynamic magnetically interacting free bodies and Maple-analysis. Proceedings of the XIIth International Scientific M. Kravchuk Conference, Kyiv, Ukraine, May, 15–17.

[30] Grygor'yeva, L. V. 2007. MAPLE-modelling of some dynamical problems of magnetically interacting bodies. DSMSI–2007: Thesis of Conference Reports of Dynamical System Modelling and Stability Investigation, Kyiv, Ukraine, May 22–25.

ORGANISATION D'ÉVÈNEMENTS SCIENTIFIQUES Janvier 11–18, 2015: Neuvième Colloque Bachelier on Mathematical Finance and Stochastic Calculus. Metabief. France. 90 participants. Co-organisateur.

Janvier 13–19, 2014: Huitième Colloque Bachelier on Mathematical Finance and Stochastic Calculus. Metabief. France. 90 participants. Co-organisateur.

Janvier 20–27, 2014: La première école d'hiver on Mathematical Finance and Stochastic Calculus. Metabief. France. 90 participants. Co-organisateur.

Mai 25–27, 2011: Dynamical System Modeling and Stability Investigation Conference (DSMSI). Kyiv. Ukraine. 60 participants. Co-organisateur.

Mai 27–29, 2009: Dynamical System Modeling and Stability Investigation Conference (DSMSI). Kyiv. Ukraine. 70 participants. Co-organisateur.

RÉSEAU PROFESSIONNELS 2012–présent: Participant dans le réseau “Geometry, Mechanics, and Control Network” financé par le Ministère Espagnol de la Recherche.

ACTIVITÉS D'ENSEIGNEMENT ET DE FORMATION

**Université de Franche-Comté**  
Besançon, France

Chaines de Markov en temps discret et continu, applications à l'étude de réseaux  
(Master 2, [Master Modélisation Statistique](#), 6h ETD) **2014–2015**

Approximation et signaux  
(Master 2, [Master Modélisation Statistique](#), 12h ETD) **2014–2015**

**Université Nationale Vadym-Hetman des Études Économiques de Kiev**  
Kiev, Ukraine

Recherche opérationnelle  
(Master 1, Master Finance et Économie, 84h ETD) **2009–2010**

Mathématiques discrètes  
(Licence 2, Informatique, 36h ETD) **2009–2010**

Économetrie  
(Licence 3, Économie et Gestion des Entreprises, 24h ETD) **2009–2010**

**Université Nationale Taras-Chevtchenko de Kiev**  
Kiev, Ukraine

Calcul infinitésimal  
(Licence 1, Modélisation Mathématique, 48h ETD) **2005–2006**