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3 - A.V. Gusarov, I. Yadroitsev, Ph. Bertrand, I. Smurov, Heat transfer modelling and stability analysis of selective laser melting, Appl. Surf. Sci. 254, 975-979 (2007).

4 - S.V. Klinkov, V.F. Kosarev, A.A. Sova, I. Smurov, Deposition of Cold Spray multicomponent coatings, Surface & Coatings Technology, 2008, 202 p.5858-5862

5. B. Gauthier, Approche spectrale pour l'interpolation à noyaux et positivité conditionnelle, thèse de l'Ecole des Mines de Saint-Etienne, soutenue le 12 juillet 2011.

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11. R.Baron, S.Béal, Rémila, P.Solal. Average tree solutions and the distribution of Harsanyi dividends, International Journal of Game Theory, 2011, 40:331-349.

12. J. Durieu J., O., Tercieux, P. Solal, Adaptive learning and p-best response sets, International Journal of Game Theory 2011 (published online January 2011). .
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14. P. Borisovsky, A. Dolgui, S. Kovalev. Modelling transfer line design problem via a set partitioning problem, *Optimization Letters*, 2011 (accepted, in Press, DOI: 10.1007/s11590-011-0317-z)

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16. M.-A. Louly, A. Dolgui. Optimal MRP parameters for a single item inventory with random replenishment lead time, POQ policy and service level constraint, *International Journal of Production Economics*, 2011 (accepted, in Press, doi 10.1016/j.ijpe.2011.02.009)

17. Y. Sotskov, A. Dolgui, M.C. Portmann. Stability Analysis of Optimal Balance for Assembly Line with Fixed Cycle Time. *European Journal of Operational Research*, 2006, vol. 168, n° 3, p. 783–797.

RAPPORT MODMAD UJM/ENISE 2011

Participation aux congrès : Présentation et approbation des résultats de recherche obtenus dans le cadre du MODMAD

1. Panasenko G. ” Asymptotic expansion of the solution of the steady Stokes equation with variable viscosity in a two-dimensional tube structure”, International conference on the occasion of V.V. Zhikov's 70th birthday, "Multiscale methods and qualitative properties for differential operators", Naples, May 6-7, 2011, Italy, Book of abstracts, pp. 6. **plenary talk**.

2. Panasenko G.P. " Asymptotic analysis of the steady Stokes equation with variable viscosity in a thin tube structure " International Conference
"Differential Equations and Related Topics" dedicated to I.G.Petrovskii, Moscow, May 2011, Book of abstracts, pp. 86-87

3. Fares R., Panasenko G. “Viscous flow in L-shaped tube structure”. GDR HMS (Homogénéisation et échelles multiples), Paris-6, mai 2011.

4. Fares R., Panasenko G.P., Stavre R. “A viscous fluid flow through a thin channel with mixed (rigid-elastic) boundary. Variational and asymptotic analysis.” Congrès National d’Analyse Numérique mai 2011.

5. Panasenko G.P. Asymptotic analysis and partial asymptotic decomposition of viscous flows in tube structures. Conference Asymptotic Methods in the Theory of Differential Equations, Chelyabinsk, June, 2011 **plenary talk**.

6. Boukrouche M. “On some lubrication problems with realistic boundary conditions” Colloque Fronco-Polonaise de Mécanique et Maths Appli, Perpignan, juin 2011

7. Viallon M.C. « Finite volume implementation of the method of partial asymptotic decomposition of thin structures » Congrès international sur les méthodes volumes finis et applications complexes à Prague, juin 2011
http://fvca6.fs.cvut.cz/

8. Panasenko G.P." Homogenization of the discrete diffusion absorption equation", Differential and Functional-Differential Equations International Conf. Moscow, 2011. Book of abstracts, pp. 49-50.

9. Fares R., Panasenko G. The Stokes flow in a tube structure with mixed boundary conditions "rigid wall- elastic wall", Workshop Multiscale Modelling and Methods, Saint-Etienne, October 2011

10. Kurbatova P., Panasenko G.*, Volpert V. The hybrid discrete-continuous models: Asymptotic and numerical study. Workshop Multiscale Modelling and Methods, Saint-Etienne, October 2011

11. Gusarov A. Physical models for radiation transfer in multiphase heterogeneous media. Workshop Multiscale Modelling and Methods, Saint-Etienne, October 2011

12. Gusarov* A.V., Pavlov M., Smurov I., "Residual stresses at laser surface remelting and additive manufacturing" VI Int. WLT-Conference on Lasers in Manufacturing (Munich, Germany, 23-26 May 2011).

13. Smurov I.,Thick composite coatings deposited by Computer Controlled Detonation Spraying (CCDS) and Cold Gas Dynamic Spraying (CGDS)II European master program Multicomponent nanostructural coatings. Nanofilms, Moscow, October 2011

14. Chival Y., Smurov I.,Development of optical monitoring of the thermal sparying. International Thermal Spray Conference and Exposition Washington, USA, September 2011

15. Smurov I., Ulianitsky V. Computer controlled detonation spraying: a spraying process upgraded to advanced applications. 10 International Conference on Surface Effects and Contact Mechanics, Malta, September 2011 **plenary talk.**

16. Viallon M.C., Panasenko G. The finite volume implementation for the asymptotic partial domain decomposition in tube structure. Workshop Multiscale Modelling and Methods, Saint-Etienne, October 2011

17. Paoli L., Boukrouch M. Asymptotic behavior of a micropolar fluid flow in a thin domain with rough boundary. Workshop Multiscale Modelling and Methods, Saint-Etienne, October 2011

18. Panasenko G. « The hybrid discrete-continuous models : Asymptotic and numerical analysis » Octobre 2011 3-ème Workshop international « Modélisation des maladies du sang » Mathematical Models and Numerical Methods in Biomathematics, Institut de Mathématique Appliquée de l'Académie des Sciences de la Russie, Moscou (co-organisation) http://dodo.inm.ras.ru/biomath/engl/workgroup.html

19. Ghintran A., Driesen B. and Vanden Eynde S. Compensation schemes and the Baker-Thompson rule. 7th Spain-Italy-Netherlands Meeting on Game Theory (SING7), à Paris (18-20 Juillet).

20. Béal S., Rémila E. and Solal P. On the number of blocks required to access the coalition structure core. 7th Spain-Italy-Netherlands Meeting on Game Theory (SING7), à Paris (18-20 Juillet).

21. Béal S., Rémila E. and Solal P. On the number of blocks required to access the core. RODAEF, Saint-Etienne, mars 2011.

22. A. Ghintran, B. Driesen and S. Vanden Eynde. Compensation schemes and the Baker-Thompson rule. 7th Spain-Italy-Netherlands Meeting on Game Theory (SING7), à Paris (18-20 Juillet).

23. Béal S., Rémila E. and Solal P. Weighted Component Fairness for Forest Games, Conference in Honor of Hans Haller, Bâton-Rouge, USA, February 25-26, 2011.

24. E. Rémila, The Optimal Strategy for the Average Long-Lived Consensus, Proceedings of the 6th International Computer Science Symposium in Russia (CSR), 2011, LNCS 6651Springer 415-428

25. K. Perrot, E. Rémila, *Avalanche Structure in the Kadanoff Sand Pile Model,* proceedings of the 5th International Conference on Language and Automata Theory and Applications (LATA), 2011, LNCS 6638 Springer 427 -439

26. K. Perrot, E. Rémila. Transduction on Kadanoff Sand Pile Model Avalanches, Application to Wave Pattern Emergence. Proceedings of the 36th International Conference on Mathematical Foundations of Computer Science, MFCS 2011 LNCS 6907, 2011, Springer 508 -519

27. P. Borisovsky, A. Dolgui, S. Kovalev. A New Model for Equipment Selection and Transfer Line Design Problem, *Preprints of the 18th IFAC World Congress*, Milano, (Italy), S. Bittanti, A. Cenedese, S. Zampieri (Eds.), August 28 - September 2, 2011, p. 3962–3967

28. D. Ivanov, A. Dolgui, B. Sokolov. On Applicability of Optimal Control Theory to Adaptive Supply Chain Planning and Scheduling, Invited keynote paper of a special session, *Preprints of the 18th IFAC World Congress*, Milano, (Italy), S. Bittanti, A. Cenedese, S. Zampieri (Eds.), August 28 - September 2, 2011, p. 423–434.

29. O. Hazir, A. Dolgui. An Exact Solution Algorithm for Balancing Simple U-Type Assembly, *Proceedings of the 21st International Conference on Production Research* (ICPR-21), D. Spath, R. Ilg, T. Krause (Eds.), July 31–August 4, 2011, Stuttgart, Germany, CD-ROM, section Assembly, 4 pages.

30. F. Hnaien, A. Dolgui. The one-period inventory control for one-level assembly systems under uncertainty, *Proceedings of the 21st International Conference on Production Research* (ICPR-21), D. Spath, R. Ilg, T. Krause (Eds.), July 31–August 4, 2011, Stuttgart, Germany, CD-ROM, section Assembly, 6 pages.

31. O. Hazir, A. Dolgui. Simple assembly line balancing under uncertainty: a robust approach, *Proceedings of the International Conference on Industrial Engineering and Systems Management* (IESM'2011), Metz, May 25-27, 2011, France, USB flash, 8 pages.

32. Paoli L. ICIAM, co-organisation du mini-symposium "Vibrations with unilateral constraints" conjointement avec A.Petrov (Weierstrass Institute, Berlin); exposé "Vibrations with unilateral constraints: an overview of M.Schatzman's contributions - Part I: discrete mechanical systems" conjointement avec A.Petrov (Weierstrass Institute, Berlin).

33. L.Paoli, (**conférence sur invitation**) "A proximal-like algorithm for vibro-impact problems with a non-smooth set of constraints", Proceedings of the 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications (Dresde (Allemagne), 25-28 mai 2010), à paraître dans AIMS Proceedings, 2011.

34. L.Paoli, (**conférence sur invitation**) "A velocity-based time-stepping scheme for multibody dynamics with unilateral constraints", Actes du 10ème colloque franco-roumain de mathématiques appliquées (Poitiers, 26-31 août 2010), soumis dans Journal Discrete and Continuous Dynamical Systems - Series S (DCDS-S), 2011.

35. G.Grekos, "On the exponential density function " seminar of Ostrava University, juin 2011.

Liste des publications MODMAD en 2011

1. Béal S., Rémila E., Solal P. Compensations in the Shapley value and the compensation solutions for graph games. International Journal of Game Theory, 2011 (published online 07.04.2011)

2. Durieu J., Solal P., Tercieux O. Adaptive learning and p-best response sets. International Journal of Game Theory, 2011, (published online 01.2011).

3.Lardon A. The gamma core in Cournot oligopoly TU-games with capacity constraints. Theory and decision, 2011, (published online 06.2011)

4. Ghintan A. A weighted position value. Mathematical Social Sciences, 2011 (accepted)

5. Durieu J., Haller H., Solal. P, Nonspecific networking, Games, 2011, 2:87-113.

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8. O. Bodini, T. Fernique, M. Rao, E. Rémila., Distances on rhombus tilings, Theoretical Computer Science, 2011, 412, 787-4794.

9. Tokarev A., Panasenko G., Ataullakhanov F., "Segregation of flowing blood: mathematical description", Math.Model.Nat.Phenom., vol. 6, 5, 2011, pp. 281-319 doi:10.1051/mmnp/20116511

10. Panasenko G.,Pileckas K., "Asymptotic analysis of the nonsteady viscous flow with a given flow rate in a thin pipe", Applicable Analysis, 2011, to appear

11. D'Angelo C, Panasenko G., Quarteroni A., "Asymptotic-numerical derivation of the Robin type coupling conditions fort he macroscopic pressure at a reservoir-capillaries interface", Applicable Analysis, 2011, to appear

12. Kurbatova P., Panasenko G., Volpert V., "Asymptotic-numerical analysis of the diffusion-discrete absorption equation", Math. Methods in the Applied Sciences, to appear

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14. P. Borisovsky, A. Dolgui, S. Kovalev. Modelling transfer line design problem via a set partitioning problem, *Optimization Letters*, 2011 (accepted, in Press, DOI: 10.1007/s11590-011-0317-z)

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16. M.-A. Louly, A. Dolgui. Optimal MRP parameters for a single item inventory with random replenishment lead time, POQ policy and service level constraint, *International Journal of Production Economics*, 2011 (accepted, in Press, doi 10.1016/j.ijpe.2011.02.009)

17. M.-A. Louly, A. Dolgui, A. Al-Ahmari. Optimal MRP offsetting for assembly systems with stochastic lead times: POQ policy and service level constraint, *Journal of Intelligent Manufacturing*, 2011 (accepted, in Press, doi: 10.1007/s10845-011-0515-7).

18. M.-A. Louly, A. Dolgui. A note on analytic calculation of planned lead times for assembly systems under POQ policy and service level constraint, *International Journal of Production Economics,* 2011 (accepted, in Press, doi 10.1016/j.ijpe.2010.09.016)

19. A. Dolgui, M.Y. Kovalyov, K. Shchamialiova. Multi-Product Lot-Sizing and Sequencing on a Single Imperfect Machine, *Computational Optimization and Applications*, 2011 (accepted, in Press, doi 10.1007/s10589-010-9346-2)
20. O. Guschinskaya, E. Gurevsky, A. Dolgui, A. Eremeev. Metaheuristic approaches for the design of machining lines, *International Journal of Advanced Manufacturing Technology*, vol. 55, n°1, 2011, p. 11–22.

21. Y. Orlovich, A. Dolgui, G. Finke, V. Gordon, F. Werner. The complexity of dissociation set problems in graphs, *Discrete Applied Mathematics*, vol. 159, n° 13, 2011, p. 1352-1366.

22. Y. Orlovich, J. Blazewicz, A. Dolgui, G. Finke, V. Gordon. On the complexity of the independent set problem in triangle graphs, *Discrete Mathematics*, vol. 311, n° 16, 2011, p. 1670-1680

23. M.-A. Louly, A. Dolgui. Optimal time phasing and periodicity for MRP with POQ policy, *International Journal of Production Economics*, vol. 131, n°1, 2011, p. 76–86.

24. L.Paoli, A proximal-like algorithm for vibro-impact problems with a nonsmooth set of constraints, Journal of Differential Equations, 250(2011)476-514.

25. Tokarev A.A., Butylin A.A., Ermakova E.A., Shnol E.E., Panasenko G.P., Ataullakhanov F.I., "Finite platelet size could be responsible for the platelet margination effect" Byophysical Journal, 2011, 101, pp. 1835-1843.

26. Tokarev A.A., Butylin A.A., Ermakova E.A., Shnol E.E., Panasenko G.P., Ataullakhanov F.I., "Finite platelet size could be responsible for the platelet margination effect" Byophysical Journal, 2011, 101, pp. 1835-1843.

27. G.Grekos, M.Sleziak, J.Tomanova . « Gaps and the exponent of convergence of an integer sequence. Uniform Distribution Theory ». A paraître.

Colloques organisés ou co-organisés par le MODMAD

1. 2-4 mars 2011 12e Congrès annuel de la société française de Recherche Opérationnelle et d'Aide à la Décision (co-organisation par le MODMAD)
Saint-Etienne, Espace Fauriel http://roadef2011.emse.fr/ (618 participants)

2. International Workshop Multiscale Modelling and Methods, Saint-Etienne, October 2011, 12 exposés
http://www.univ-st-etienne.fr/laral/Programme%20colloque%20MMM.pdf

3. ICIAM, co-organisation du mini-symposium "Vibrations with unilateral constraints"(L. Paoli conjointement avec A.Petrov, Weierstrass Institute,
Berlin).

4. Dans le cadre de MODMAD, Vladimir Toma (Université Comenius à Bratislava) est venu faire un séminaire le 6 septembre

Le titre de son exposé était "Le théorème de May pour les populations infinies".

Soutenances des thèses dans le cadre de la thématique du MODMAD

1. Roula Fares. Etude asymptotique et numérique d'écoulements de fluide non-newtonien dans des structures tubulaires minces. ED SIS. Directeurs Prof. G.Panasenko et Prof. L.Carraro. St-Etienne, le 21/11/2011

2. Polina Kurbatova. Modélisation hybride de l'érythropoïèse et des maladies sanguines. ED InfoMaths. Directeurs Prof. G.Panasenko et DR V.Volpert. Lyon, 24/11/2011

3. Evgeny Gurevsky Conception de lignes de fabrication sous incertitudes : analyse de sensibilité et approche robuste, ED SIS, Directeur A. Dolgui, co-encadrant : O. Battaïa, 13/12/2011

4. Aymeric Lardon, Five Essays in Cooperative Oligopoly Games. Directeur de Thèse : P. Solal., 13 octobre 2011.

MODMAD Research Federative Structure
of the University of Saint-Etienne and
ENISE (Engineer School of Saint-Etienne)

International Workshop (Seminar) on the Multiscale Modelling and Methods (MMM)

October 9-11, 2011, Saint-Etienne - Organiser: Grigory Panasenko
Invited speakers: V.Chiado-Piat, Italy,Torino, M.Chipot , Switzerland, Zurich, A.Gusarov, France, Saint-Etienne, P.Mironescu, France, Lyon, K.Pankrashkin, France, Paris, I.Pankratova, Norway, Narvik, A.Piatnitskii, Norway, Narvik, E.Sanchez-Palencia, France

The workshop is devoted to a recent and important trend in mathematical modelling: the multiscale methods. Such methods combine the microscopic and macroscopic description of the phenomena and are usually based on the asymptotic and the numerical analysis of the equations of the microscopic model.

Working languages: English and French