

Секция: Паралелни алгоритми
Ръководител: проф. дн Иван Димов

1.6. ОБЩОНАЦИОНАЛНИ И ОПЕРАТИВНИ ДЕЙНОСТИ, ОБСЛУЖВАЩИ ДЪРЖАВАТА (до 2 стр).

1.6.1.1. Списък на съвети, комисии и други експертни органи на национални правителствени и държавни институции, индустрията, енергетиката, околната среда, селското стопанство, национални културни институции и др., в които участват учен или специалист от звеното:

Наименование на експертния орган	Име на участника
<ul style="list-style-type: none"> • Съвет за Научна политика (МОМН) – член • Експертен съвет за наука, технологии и иновации към Кмета на Столична община – член • Комисия на Общото събрание на БАН по Научна политика – член • Консултативен съвет по Информационни и комуникационни науки и технологии на БАН – член • Научен съвет на ИИКТ–БАН – председател • Изпитна комисия за кандидатски минимум по базов специализиран предмет 	Проф. дн Иван Димов
<ul style="list-style-type: none"> • Национална Агенция за Оценкаване и Акредитация (НАОА) • Факултетен съвет на ФМИ-СУ - член 	Проф. дн Андрей Андреев
<ul style="list-style-type: none"> • Изпитна комисия за избор на главен асистент по информатика 	Доц. д-р Пенчо Маринов
<ul style="list-style-type: none"> • Изпитна комисия за избор на главен асистент по информатика • Изпитна комисия за кандидатски минимум по базов специализиран предмет 	Доц. д-р Стефка Фиданова

1.6.1.2. Списък по раздели на писмено представени от служителя на звеното: концепции, програми, прогнози, експертизи, становища, консултации, рецензии и др. подобни за национални правителствени и държавни институции, индустрията, енергетиката, околната среда, селското стопанство, национални културни институции и др.

Наименование на материала	Име на автора
Рецензии в конкурс за доцент 3 бр. Рецензии в конкурс за професор 3 бр. Становище в конкурс за професор 1 бр. Рецензия за НС „Доктор на науките“ 1 бр. Рецензии на международни проекти 7 бр. Рецензии на статии за международни списания 11 бр. Рецензии на статии за международни поредици 14 бр.	Проф. дн Иван Димов
Становища за НАОА 2 бр. Рецензии в конкурс за доцент 3 бр. Рецензия за НС „Доктор на науките“ 1 бр. Рецензия на статии за международни списания 1 бр. Рецензии на статии за международни поредици 1 бр.	Проф. дн Андрей Андреев
Рецензия за ОНС „Доктор“ 1 бр. Рецензии на статии за международни списания 4 бр. Рецензии на статии за международни поредици 4 бр.	Доц. д-р Пенчо Маринов
Становища за ОНС „Доктор“ 1 бр. Рецензии за вътрешни проекти на БУ „Асен Златаров“ 2 бр. Рецензии на статии за международни списания 18 бр. Рецензии на статии за международни поредици 36 бр.	Доц. д-р Стефка Фиданова
Рецензия на международни проекти 1 бр. Рецензии на статии за международни списания 5 бр.	Доц. д-р Михаил Недялков

2. РЕЗУЛТАТИ ОТ НАУЧНАТА ДЕЙНОСТ ПРЕЗ 2012 г.:

2.1. Моля, опишете ЕДНО най-важно и ярко научно постижение

„ОПТИМАЛНИ АЛГОРИТМИ МОНТЕ КАРЛО АЛГОРИТМИ ЗА ЗАДАЧИ С ГОЛЕМИ РАЗМЕРНОСТИ”

Разработени са алгоритми Монте Карло, които се основават на идеята за "симетризирано рандомизиране" на многомерни точки, получени чрез квазислучайни редици. Доказано е, че един от алгоритмите е оптимален в класа на подинтегралните функции с ограничени втори производни и подобрява известен резултат на проф. Арт Оуен от 1995 година. Редица нови резултати са получени в областта на приложение на методите Монте Карло за анализ на чувствителността на големи и свръхголеми изчислителни модели, предназначени за изследване на екологични проблеми и физични процеси в нано-структури. Проведеният анализ е от изключителна важност за подобряване на надеждността на резултатите от математическото моделиране, използвани при вземането на важни за обществото решения.

Проведено е симулиране с методи Монте Карло на декохеренцията на сплетени състояния на електрони, получена в резултат на разсейване от фонони в полупроводникови материали, което е от съществена важност за нано-технологиите. Намерена е формулировка на уравнението на Вигнер-Болцман, в която размерността е редуцирана чрез използването на техниката „анализ на дисперсиите”, и е доказана теорема, свързваща силовите параметри на уравнението с осцилатори, като фонони в твърди тела.

Резултатите са получени в рамките на три проекта, финансирани от НФНИ, и един проект, финансиран от Европейската комисия, и са публикувани в 4 глави от книги и в 16 статии в специализирани международни списания и поредици, от които 4 са в списания с импакт-фактор и 8 - в издания с SJR ранг.

Ръководител на разработката е проф. дн Иван Димов.

2.2. Моля, опишете ЕДНО най-важно и ярко научно-приложно постижение

„РАЗРАБОТВАНЕ НА СТОХАСТИЧНИ И ЕВРИСТИЧНИ АЛГОРИТМИ И МОДЕЛИ ЗА СИМУЛАЦИЯ И ОПТИМИЗАЦИЯ НА ПРОЦЕСИ”

Разработен е алгоритъм за симулиране на поведението на биореактор за получаване на лекарствени субстанции.

Предложен е алгоритъм за построяване по оптимален начин на безжична сензорна мрежа с критерии „минимален брой сензори“ и „минимален разход на енергия“.

Разработен е модел за симулиране на горски и полски пожари.

Резултатите са получени в рамките на два проекта, финансирани от НФНИ, и един проект, финансиран от МОМН.

По това научно постижение са публикувани 4 глави от книги, както и 10 статии в специализирани международни списания и поредици, като: а) J. of Biotechnology & Biotechnological Equipment; б) Springer Studies in Computational Intelligence; в) Proc. of IEEE Conf. on Intelligent Systems.

Ръководител на разработката е доц. д-р Стефка Фиданова.

3. МЕЖДУНАРОДНО НАУЧНО СЪТРУДНИЧЕСТВО НА ЗВЕНТО:

3.1. В рамките на договори и спогодби на ниво Академия

- „Математическо и компютърно моделиране на някои проблеми на опазването на околната среда в атмосферата“, ЕБР с Унгарската Академия на Науките, 2010 - 2012 (ръководител: доц. д-р Красимир Георгиев, секция „Научни пресмятания“)
- „Ефективни Монте-Карло методи за фотореалистичен синтез на изображения“, ЕБР с Унгарската Академия на Науките, 2010 — 2012 (ръководител: д-р Антон Пензов, секция „Паралелни алгоритми“)

През настоящата година успешно продължи двустранното сътрудничество по темата „Ефективни Монте-Карло методи за фотореалистичен синтез на изображения“ между секцията по „Паралелни алгоритми“ при *Института по информационни и комуникационни технологии - София* и *Групата по „Компютърна графика“* при *Техническият Университет – Будапеща* в рамките на двустранната спогодба за научно сътрудничество между БАН и Унгарската АН за периода 2010 – 2012 година. Поредица от срещи и дискусии се проведеха през месец октомври в Будапеща, на които бе разгледано текущото състояние и напредъка по:

- нови Монте Карло алгоритми за създаване на фотореалистични изображения с осветяване от околната среда;
- и симулации на медицински изображения в компютърната томография.

Направени са общо 8 публикации в рамките на проекта през периода 2010 – 2012 година.

- „Паралелни и разпределени научни приложения“, ЕБР с Полската Академия на Науките, 2010 – 2012 (ръководител: доц. д-р Иван Лирков, секция „Научни пресмятания“)
- **EOARD** (European Office of Aerospace Research and Development), FA8655-12-1-0004, 11.2011-11.2012, БАН е подизпълнител на National Observatory of Athens

3.2. В рамките на договори и спогодби на институтско ниво

- Съвременните пресмятания в полза на иновацията, **AComIn**, FP7 Capacity Programme, Research Potential of Convergence Regions, FP7-REGPOT-2012-2013-1, договор 316087, 2012 – 2015, финансиран от Европейската комисия (ръководител: проф. дн Галя Ангелова, секция „Лингвистично моделиране“)
- **GOES** 070401/2010/579105/SUB/C4, 2010 – 2013, финансиран от Европейската комисия (ръководител: гл. ас. д-р Нина Добринкова, секция „Комуникационни системи и услуги“)

7. ДАННИ ЗА ПУБЛИКАЦИОННАТА ДЕЙНОСТ НА ЗВЕНОТО

- Списък на публикации, които са реферирани и индексирани в световна система за реферирание, индексирание и оценяване (в световни вторични литературни източници)

излезли от печат

1. **A.B. Andreev**, M.R. Racheva, Lower Bounds for Eigenvalues and Postprocessing by an Integral Type Nonconforming FEM, *Numerical Analysis and Applications* 5(3), 2012, 191-203. ISSN 1995-4239. SJR (2011): 0.140.
2. **A. B. Andreev**, M. Racheva. Properties and Estimates of an Integral Type Nonconforming Finite Element. - In: *Proceedings of Large-Scale Scientific Computations 2011, LNCS 7116, Springer*, 2012, 525-532. ISSN 0302-9743. SJR (2011): 0.331.
3. **A. B. Andreev**, M. Racheva. Quadratic Finite Element Approximation of a Contact Eigenvalue Problem. - In: *Proceedings of Large-Scale Scientific Computations 2011, LNCS 7116, Springer*, 2012, 533-540. ISSN 0302-9743. SJR (2011): 0.331.
4. Atanassova V., **Fidanova S.**, Chountas P., Atanassov K., A Generalized Net with an ACO-algorithm Optimization Component. - In: *Proceedings of Large-Scale Scientific Computations 2011, LNCS 7116, Springer*, 2012, 190 - 197. ISSN 0302-9743. SJR (2011): 0.331.
5. Atanassova V., **Fidanova S.**, Popchev I., Chountas P. Generalized nets, ACO-algorithms and Genetic Algorithm, In Monte Carlo Methods and Applications,. - In: *Monte Carlo Methods and Applications*, K. K. Sabelfeld, I. Dimov (eds.). De Gruyter Proceedings in Mathematics, 2012, 39 - 46. ISBN: 978-3-11-029359-3. (book chapter).
6. A. Belehaki, I. Tsagouri, I. Kutiev, P. Marinov, **S. Fidanova**, Upgrades to the Topside Sounders Model assisted by Digisonde (TaD) and Its Validation at the Topside Ionosphere. *J. Space Weather Space Clim.* 2. EDP Sciences, 2012, A20. ISSN 2115-7251. CrossRef indexation.
7. **I. T. Dimov**. Editor of *Monte Carlo Methods and Applications*, K. K. Sabelfeld, I. Dimov (eds.). De Gruyter Proceedings in Mathematics, 2012. Proceedings of 8th IMACS Seminar on Monte Carlo Methods, August 29 – September 2, 2011, Borovets, Bulgaria.
8. **I. T. Dimov**, **R. Georgieva**, **Tz. Ostromsky**. Monte Carlo Sensitivity Analysis of an Eulerian Large-scale Air Pollution Model. *Reliability Engineering and System Safety* 107 (2012), 23-28. Elsevier. ISSN: 0951-8320. Doi: 10.1016/j.res.2011.06.007. IF (2012): 1.770; 5-year IF: 2.170.
9. N. Dobrinkova, **S. Fidanova**, **I. T. Dimov**, K. Atanassov, J. Mandel. Game-Method for Modelling and WRF-Fire Model Working Together. - In: *Monte Carlo Methods and Applications*, K. K. Sabelfeld, I. Dimov (eds.). De Gruyter Proceedings in Mathematics, 2012, 79 - 86. ISBN: 978-3-11-029359-3. (book chapter).
10. **Fidanova S.**, Atanassov K., **Marinov P.**, Intuitionistic Fuzzy Estimation of the Ant Colony Optimization Starting Points. - In: *Proceedings of Large-Scale Scientific Computations 2011, LNCS 7116, Springer*, 2012, 222 - 229. ISSN: 0302-9743. SJR (2011): 0.331.
11. **Fidanova S.**, **Marinov P.**, Alba E., Ant Algorithm for Optimal Sensor Deployment, Computational Intelligence, K. Madani, A.-D. Correia, A. Rosa, J. Filipe (eds.), *Studies in Computational Intelligence* 399, Springer, ISSN 1860-949X, 2012. SJR (2011): 0.192, 21 – 29.

12. **Fidanova S., Marinov P.**, Alba E., Wireless Sensor Network Layout. - In: *Monte Carlo Methods and Applications*, K. K. Sabelfeld, I. Dimov (eds.). De Gruyter Proceedings in Mathematics, 2012, 87 - 96. ISBN: 978-3-11-029359-3. (book chapter).
13. K. Georgiev, **Tz. Ostromsky**, Z. Zlatev, New Parallel Implementation of an Air Pollution Computer Model – Performance Study on an IBM Blue Gene/P Computer. - In: *Proceedings of Large-Scale Scientific Computations 2011, LNCS 7116*, Springer, 2012, 283 – 290. ISSN: 0302-9743. SJR (2011): 0.331.
14. Kutiev, I., P. Marinov, **S. Fidanova**, A. Belehaki, I. Tsagouri, Adjustments of the TaD electron density reconstruction model with GNSS TEC parameters for operational application purposes. *J. Space Weather Space Clim. 2. EDP Sciences*, 2012, A21. ISSN 2115-7251, CrossRef indexation. Doi: 10.1051/swsc/2012021.
15. **M. Nedjalkov**, P. Schwaha, S. Selberherr, D. K. Ferry, D. Vasileska, P. Dollfus, D. Querlioz. Role of the Physical Scales on the Transport Regime. - In: Proceedings of The 15th International Workshop on Computational Electronics, IEEE Xplore, 2012, art. no. 6242848. ISBN: 978-1-4673-0705-5, 1 – 3.
16. F. Ortmann, S. Roche, J. C. Greer, G. Huhs, T. Shulthess, T. Deutsch, P. Weinberger, M. Payne, J. M. Sellier, J. Sprekels, J. Weinbub, K. Rupp, **M. Nedjalkov**, D. Vasileska, E. Alfinito, L. Reggiani, D. Guerra, D. K. Ferry, M. Saraniti, S.M. Goodnick, A. Kloes, L. Colombo, K. Lilja, J. Mateos, T. Gonzalez, E. Velazquez, P. Palestri, A. Schenk, M. Macucci. Multi-Scale Modelling for Devices and Circuits. Special issue of *E-Nano Newsletter*, 2012, 4 – 34. Open Access: http://www.phantomsnet.net/Foundation/Enano_newsletterSIApril2012.php.
17. **Ostromsky, Tz., I. T. Dimov, R. Georgieva**, Z. Zlatev. Parallel Computation of Sensitivity Analysis Data for the Danish Eulerian Model. – In: *Proceedings of LSSC 2011, LNCS 7116*, Springer, 2012, 307-315. ISSN: 0302-9743. SJR (2011): 0.331.
18. **Ostromsky, T., Georgiev, K.**, Zlatev, Z., An Efficient Highly Parallel Implementation of a Large Air Pollution Model on an IBM Blue Gene Supercomputer. - In: AIP Conf. Proc. 1487, 2012, 135 - 142. ISSN: 0094-243X. ISBN: 978-0-7354-1099-2. SJR (2011): 0.142. Doi: 10.1063/1.4758951.
19. Roeva O., **Fidanova S.**, Application of Genetic Algorithm and Ant Colony Optimization for Modelling *E.Coly* Cultivation process, Genetic Algorithm, In-Tech Pub. ISBN 979-307-879-2, Chapter 13, 2012, 261 — 282. (book chapter).
20. P. Schwaha, **M. Nedjalkov**, S. Selberherr, **I. T. Dimov**, Monte Carlo Investigations of Electron Decoherence due to Phonons.- In: *Monte Carlo Methods and Applications*, K. K. Sabelfeld, I. Dimov (eds.). De Gruyter Proceedings in Mathematics, 2012, 203 - 211. ISBN: 978-3-11-029359-3. (book chapter).
21. P. Schwaha, **M. Nedjalkov**, S. Selberherr, **I. T. Dimov**. Particle-Grid Techniques for Semiclassical and Quantum Transport Simulations. - In: Proceedings of The 15th International Workshop on Computational Electronics, IEEE Xplore, 2012, art. no. 6242860. ISBN: 978-1-4673-0705-5, 1 – 3.
22. P. Schwaha, **M. Nedjalkov**, S. Selberherr, **I. T. Dimov**, Phonon-Induced Decoherence in Electron Evolution. - In: Proceedings of LSSC 2011, I. Lirkov, S. Margenov, J. Wasniewski (eds.), LNCS 7116, Springer, 2012, 472 - 479. ISSN: 0302-9743. SJR (2011): 0.331.

приети за печат

1. S. Ahmed, **M. Nedjalkov**, D. Vasileska. Comparative Study of Various Self-Consistent Event Biasing Schemes for Monte Carlo Simulations of Nanoscale MOSFETs. - In: Theory and Applications of Monte Carlo Simulations. ISBN 980-953-307-695-4. Doi: 10.5772/53113 (book chapter).
 2. **I. T. Dimov**, **R. Georgieva**, **Tz. Ostromsky**, Z. Zlatev. Advanced Algorithms for Multidimensional Sensitivity Studies of Large-scale Air Pollution Models based on Sobol Sequences. Special issue of *Computers and Mathematics with Applications*, "Efficient Numerical Methods for Scientific Applications". Elsevier. ISSN: 0898-1221. Doi: 10.1016/j.camwa.2012.07.005. IF (2012): 1.747. 5-year IF: 1.643.
 3. **I. T. Dimov**, **R. Georgieva**, **Tz. Ostromsky**, Z. Zlatev. Variance-based Sensitivity Analysis of the Unified Danish Eulerian Model According to Variations of Chemical Rates. - In: Proceedings of NAA 2012. LNCS, Springer. ISSN: 0302-9743. SJR (2011): 0.331.
 4. **Fidanova S.**, **Marinov P.**, Influence of the Parameters A and B on Ant Colony Optimization Start Strategies. - In: Proceedings of NAA 2012, *LNCS, Springer*. ISSN: 0302-9743. SJR (2011): 0.331.
 5. **Fidanova S.**, **Shindarov M.**, **Marinov P.**, Multi-Objective Ant Algorithm for Wireless Sensor Network Positioning. - In: Proceedings of the Bulgarian Academy of Sciences. ISSN 1310-1331. IF: 0.210.
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 7. **Tz. Ostromsky**, **I. T. Dimov**, **R. Georgieva**, **P. Marinov**, Z. Zlatev. High Performance Computing of Data for a New Sensitivity Analysis Algorithm, Applied in an Air Pollution Model. - In: Proceedings of NAA 2012, *LNCS, Springer*. ISSN: 0302-9743. SJR (2011): 0.331.
 8. Roeva O., **Fidanova S.**, Metaheuristic Techniques for Optimization of an E. coli Cultivation Model, *J. of Biotechnology & Biotechnological Equipment*, DIAGNOSIS PRESS LTD, ISSN:1310-2818, SJR 0.190, IF 0.760.
 9. Z. Zlatev, K. Georgiev, **I. Dimov**. Influence of climatic changes on pollution levels in the Balkan Peninsula. *Computers and Mathematics with Applications*, "Efficient Numerical Methods for Scientific Applications". Elsevier. ISSN: 0898-1221. Doi: 10.1016/j.camwa.2012.07.005. IF (2012): 1.747. 5-year IF: 1.643.
- Списък на публикациите, които са включени в издания с импакт фактор IF (Web of Science) или импакт ранг SJR (SCOPUS) – те са част от горния списък

излезли от печат

- 1 A.B. Andreev, M.R. Racheva, Lower Bounds for Eigenvalues and Postprocessing by an Integral Type Nonconforming FEM, *Numerical Analysis and Applications* 5(3), 2012, 191-203. ISSN 1995-4239. SJR (2011): 0.140.
- 2 **A. B. Andreev**, M. Racheva. Properties and Estimates of an Integral Type Nonconforming Finite Element. - In: *Proceedings of Large-Scale Scientific Computations 2011, LNCS 7116, Springer*, 2012, 525-532. ISSN 0302-9743. SJR (2011): 0.331.

- 3 **A. B. Andreev**, M. Racheva. Quadratic Finite Element Approximation of a Contact Eigenvalue Problem. - In: *Proceedings of Large-Scale Scientific Computations 2011, LNCS 7116, Springer*, 2012, 533-540. ISSN 0302-9743. SJR (2011): 0.331.
- 4 Atanassova V., **Fidanova S.**, Chountas P., Atanassov K., A Generalized Net with an ACO-algorithm Optimization Component. - In: *Proceedings of Large-Scale Scientific Computations 2011, LNCS 7116, Springer*, 2012, 190 - 197. ISSN 0302-9743. SJR (2011): 0.331.
- 5 **I. T. Dimov**, **R. Georgieva**, **Tz. Ostromsky**. Monte Carlo Sensitivity Analysis of an Eulerian Large-scale Air Pollution Model. *Reliability Engineering and System Safety* 107 (2012), 23-28. Elsevier. ISSN: 0951-8320. Doi: 10.1016/j.ress.2011.06.007. IF (2012): 1.770; 5-year IF: 2.170.
- 6 **Fidanova S.**, Atanassov K., **Marinov P.**, Intuitionistic Fuzzy Estimation of the Ant Colony Optimization Starting Points. - In: *Proceedings of Large-Scale Scientific Computations 2011, LNCS 7116, Springer*, 2012, 222 - 229. ISSN: 0302-9743. SJR (2011): 0.331.
- 7 **Fidanova S.**, **Marinov P.**, Alba E., Ant Algorithm for Optimal Sensor Deployment, Computational Intelligence, K. Madani, A.-D. Correia, A. Rosa, J. Filipe (eds.), *Studies in Computational Intelligence* 399, Springer, ISSN 1860-949X, 2012. SJR (2011): 0.192, 21 – 29.
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64. On-line implementation of TaD, this is the tool we developed not in DIAS but in Athens Digisonde for a selected period and the results are demonstrated through the address:

<http://www.iono.noa.gr/ElectronDensity/EDProfile.php>

НАЦИОНАЛНИ ПРОЕКТИ

- „Монте Карло методи, паралелни алгоритми и приложения“, бюджетен проект (ръководител: проф. дн Иван Димов, секция „Паралелни алгоритми“, ИИКТ-БАН)
- „Симулиране поведението на горски и полски пожари“, ФНИ, Договор #И-01/6, 2012 – 2014 (ръководител: доц. д-р Пенчо Маринов, секция „Паралелни алгоритми“, ИИКТ-БАН), 2012 – 2014
- „Специализирани публикации в реферирани издания и издания с импакт фактор“, ОП „Развитие на човешките ресурси“, „Наука и бизнес“, 2012 (ръководител: доц. д-р Стефка Фиданова, секция „Паралелни алгоритми“, ИИКТ-БАН)
- „Разработване и изследване на нови методи Монте Карло за моделиране на сложни системи“, НФНИ, Договор #ДМУ 03/61, 2011-2013 (ръководител: гл. ас. д-р Райна Георгиева, секция „Паралелни алгоритми“, ИИКТ-БАН)
- „Ефективни Монте Карло методи за големи научно-изследователски задачи“, НФНИ, Договор #ДТК 02/44, 2009-2012 (ръководител: проф. дн Иван Димов, секция „Паралелни алгоритми“, ИИКТ-БАН)
- „Център за върхови научни постижения SuperCA++“, НФНИ, Договор #DCVP 02/1, 2010-2012 (ръководител: проф. дн Св. Маргенов, секция „Научни пресмятания“, ИИКТ-БАН)
- „Моделиране на процеси с фиксирани правила за развитие МодПроФикс“, НФНИ, Договор ДИД-02/29, 2010-2013 (ръководител: проф. Кр. Атанасов, ИБФБМИ – БАН; доц. д-р Стефка Фиданова, секция „Паралелни алгоритми“, координатор за ИИКТ-БАН)
- „Към изграждането на българска национална информационна система за прогнозиране на химическото време“, НФНИ, ДО 02-161/2008 (ръководител: проф. дн Д. Сираков, НИМХ-БАН)

ЧЛЕНСТВО В НАУЧНИ ОРГАНИЗАЦИИ

- Съюз на математиците в България
- IMACS (Technical committee on Monte Carlo methods)
- SIAM
- Marie Curie Fellowship Association
- EU/ME European Chapter on Metaheuristics - Euro Working Group
- Italian Physical Society

Участие през 2012 г. в международни конференции с доклади или съавторство

Дата на провеждане		Място на провеждане (град, държава)	Наименование на конференцията	Наименование и автор на доклада
Ден	Месец			
=1=	=2=	=3=	=4=	=5=
13-14	3	Prague, Czech republic	COST Action ES0803 Workshop on Final Results	Advanced topside ionosphere and plasmasphere electron density profiling technique: an overview of progress achieved within the COST Action ES0803, Kutiev, I., Pencho Marinov, Stefka Fidanova, Anna Belehaki, Ioanna Tsagouri
11-16	06	Св. Св. Константин и Елена, гр. Варна, България	Fourth Conference of the Euro-American Consortium for Promoting the Application of Mathematics in Technical and Natural Sciences (AmiTaNS'12)	Global Sensitivity Analysis of Compact Models in Nanodevices, A. Asenov, I. Dimov, R. Georgieva An Efficient Highly Parallel Implementation of a Large Air Pollution Model on an IBM Blue Gene Supercomputer, T. Ostromsky, K. Georgiev, Z. Zlatev
13-16	06	Пловдив, България	International Workshop on DYNAMICS AND CONTROL IN AGRICULTURE AND FOOD PROCESSING (DYCAF'12)	Application of the Game Method for Modelling the Forest Fire Perimeter Expansion. Part 1: A Model Fire Intensity Without Effect Of Wind, Sotirova E., K. Atanassov, S. Fidanova, E. Velizarova, P. Vassilev, A. Shannon Application of the Game Method for Modelling the Forest Fire Perimeter Expansion. Part 2: A Model Fire Intensity With Effect Of Wind, Sotirova E., K. Atanassov, S. Fidanova, E. Velizarova, P. Vassilev, A. Shannon Application of the Game Method for Modelling the Forest Fire Perimeter Expansion. Part 3: A Model of the Forest Fire Speed Propagation in Different Homogenous Vegetation Types, Sotirova E., K. Atanassov, S. Fidanova, E. Velizarova, P., Vassilev, A. Shannon
15-20	06	Лозенец, България	Fifth Conference on Numerical Analysis and Applications (NAA 2012)	Metamodeling and Monte Carlo Algorithms for Variance-based Sensitivity Analysis of the Unified Danish Eulerian Model, I. T. Dimov, R. Georgieva, Tz. Ostromsky, Z. Zlatev Influence of the Parameters A and B on Ant Colony Optimization Start Strategies, S. Fidanova, P. Marinov High Performance Computing of Data for a New Sensitivity Analysis Algorithm, Applied in an Air Pollution Model, T. Ostromsky, I. Dimov, R. Georgieva, P. Marinov, Z. Zlatev
23-30	06	Поморие, България	XV-th INTERNATIONAL SUMMER CONFERENCE ON PROBABILITY AND STATISTICS (ISCPS-2012)	Efficient Monte Carlo Approaches for Evaluating Integrals with Applications to Sensitivity Studies, I. Dimov, R. Georgieva, S. Ivanovska
28-30	06	Southampton, UK	Mini Conference - Optimisation of Mobile Communication Networks	Mono-objective Algorithm for Wireless Sensor Layout, Fidanova S., Shindarov M., Marinov P.
14-22	07	Mysore, India	39-th COSPAR Scientific Assembly	Reconstruction of the Vertical Ionospheric Electron Density Distribution from Multi-Instrument Observation Data, Stankov Stan, Marinov Pencho, Kutiev Ivan
06-08	09	София, България	6th IEEE International Conference on Intelligent Systems IS'12	On the Game Method for the Forest Fire Spread Modelling with Considering the Wind Effect, Velizarova E., Sotirova E., Atanassov K., Vassilev P., S. Fidanova Wireless Sensor Positioning Algorithm, Shindarov M., Fidanova S., Marinov P.
08-11	09	Kraków, Poland	FEDERATED CONFERENCE ON COMPUTER SCIENCE AND INFORMATION SYSTEMS (FedCSIS 2012)	ACO for Parameter Settings of <i>f.E. coli</i> Fed-batch Cultivation Model, Fidanova S., Roeva O., Ganzha M.