

**Публикации**  
**на Михаил Иванов Кръстанов**  
**за участие в конкурса за член-кореспондент на БАН**

**I. Научни публикации в специализирани списания и сборници**

1. **Krastanov, Mikhail Ivanov**; Nikolova, Margarita Nikolaeva, A necessary condition for small-time local controllability, Automatica J. IFAC 124 (2021), 109258. JCR-IF (Web of Science): **5.541(2019)** Квартил **Q1 (9/63)** **Automation / Control Systems**
2. Borisov, Milen; Neli S. Dimitrova, **Mikhail I. Krastanov**, Global stabilizability of an anaerobic biodegradation process via piecewise constant feedback. International Journal of Robust and Nonlinear Control, vol. 30, issue 7, May 10, **2020**, 2777 - 2795. John Wiley & Sons Ltd, ISSN:1049-8923 (Print), 1099-1239 (Online), <http://dx.doi.org/10.1002/rnc.4914>, JCR-IF (Web of Science):**3.503 (2019)**; SJR 1.631 (2019) – **Q1(6/261)** (top 10% Mathematics Applied)
3. Bivas, Mira; **Mikhail I. Krastanov**, N. Ribarska, On tangential transversality. Journal of Mathematical Analysis and Applications, 481(1), Elsevier, **2020**, JCR-IF (Web of Science):**1.220/2019**, Квартил **Q1 (77/325)** **Mathematics**
4. Bivas, Mira; **Mikhail I. Krastanov**, N. Ribarska, On strong tangential transversality. Journal of Mathematical Analysis and Applications, 490, 1, Elsevier, **2020**, JCR-IF (Web of Science):**1.220/2019**, Квартил **Q1 (77/325)** **Mathematics**
5. A.L. Dontchev, I.V. Kolmanovsky, **M. I. Krastanov**, V.M. Veliov, P.T. Vuong, Approximating optimal finite horizon feedback by model predictive control, Systems & Control Letters, 139 (2020) 104666, JCR-IF **2.762(2019)**, Квартил Q2 (30/62) **Automation / Control Systems Q2 (Scopus)**

6. Apostolov Stoyan R.; **Mikhail I. Krastanov**, Nadezhda Ribarska. Sufficient Condition for Tangential Transversality. *Journal of Convex Analysis*, 27, **2020**, ISSN:0944-6532, JCR-IF (Web of Science):**0.527/2019**, Квартил **Q4 (255/324)** **Mathematics Q2 (Scopus)**
  
7. **Krastanov, Mikhail I.**, Nadezhda Ribarska, On a Bolza problem, *Comptes rendus de l'Academie bulgare des sciences*, 73, 5, 612-623, **2020**, ISSN:1310-1331, DOI: 10.7546/CRABS.2020.05.03. JCR-IF (Web of Science): **0.321 (2019)** Квартил **Q4 (66/71)** **Multidisciplinary Sciences Q2 (Scopus)**
  
8. **Krastanov, Mikhail Ivanov**; Nikolova, Margarita Nikolaeva, A sufficient condition for small-time local controllability of a polynomial control system. Доклади на БАН, 73, 12, Марин Дринов, **2020**, 1638-1649. JCR-IF (Web of Science): **0.321 (2019)** Квартил **Q4 (66/71)** **Multidisciplinary Sciences Q2 (Scopus)**
  
9. Dontchev, Asen L.; **Mikhail I. Krastanov**, Vladimir M. Veliov, On the existence of Lipschitz continuous optimal feedback control. *Vietnam Journal of Mathematics* 47 (**2019**), no. 3, 579–597. SJR Scopus **0.375 (2019)** **Q3 (Scopus)**
  
10. Dontchev, Asen L.; Ilya Kolmanovsky, **Mikhail I. Krastanov**, Nicotra, Marco, Vladimir M. Veliov, Lipschitz stability in discretized optimal control with application to SQP. *SIAM J. Control Optim.* 57 (**2019**), no. 1, 468–489. JCR-IF (Web of Science):**1.538/2019**, Квартил **Q1 (62/261)** **Mathematics Applied**
  
11. Dimitrova, Neli S., **Mikhail I. Krastanov**, On practice-oriented stabilizability of a chemostat model via bounded open-loop control. Доклади на БАН. 72 (2019), no. 7, 880–890. JCR-IF (Web of Science): **0.321 (2019)** Квартил **Q4 (66/71)** **Multidisciplinary Sciences Q2 (Scopus)**
  
12. Neli S. Dimitrova, **Mikhail I. Krastanov**, Model-based stabilization of a fermentation process using output feedback with discrete time delay. *Numerical methods and applications*, 342–350, *Lecture Notes in Computer Sciences*, 11189, Springer, Cham, **2019**. SJR Scopus **0.427 (2019)** **Q2 (Scopus)**

13. Dimitrova, Neli S., **Mikhail I. Krastanov**, Model-based Control Strategies for Anaerobic Digestion Processes, *Biomath*, 8 (2019). SJR Scopus **0.25 (2020)**
14. **Krastanov, Mikhail I.**, Nadezhda Ribarska, A functional analytic approach to a Bolza problem, *Control systems and mathematical methods in economics*, 97–117, *Lecture Notes in Economics and Mathematical Systems*, 687, Springer, Cham, **2018**. SJR Scopus **0.113 (2018)**
15. Cibulka, Radek; Asen L. Dontchev, **Mikhail I. Krastanov**, M. I.; Veliov, V. M. Metrically regular differential generalized equations. *SIAM J. Control Optim.* 56 (2018), no. 1, 316–342. JCR-IF (Web of Science):**1.986/2018**, Квартил **Q1 (40/254) Mathematics Applied**
16. Borisov, Milen; Neli S. Dimitrova, **Mikhail I. Krastanov**, Global asymptotic stability of a functional differential model with time delay of an anaerobic biodegradation process. *Serdica J. Comput.* 11 (2017), no. 1, 9–29.
17. **Krastanov, Mikhail I.**, Nadezhda Ribarska, Nonseparation of sets and optimality conditions. *SIAM J. Control Optim.* 55 (2017), no. 3, 1598–1618. JCR-IF (Web of Science):**1.594(2017)**, Квартил **Q1 (52/252) Mathematics Applied**
18. Dimitrova, Neli S., **Mikhail I. Krastanov**, Global asymptotic stabilization of a model of an anaerobic bioreactor with methane production, *Mathematics and education in mathematics*, 80-100, **2017**.
19. Aseev, Sergei M., **Mikhail I. Krastanov**, M. I.; Veliov, Optimality conditions for discrete-time optimal control on infinite horizon. *Pure Appl. Funct. Anal.* 2 (2017), no. 3, 395–409.
20. Borisov, Milen; Neli S. Dimitrova, **Mikhail I. Krastanov**, Functional differential model of an anaerobic biodegradation process. Large-scale

scientific computing, 101–108, Lecture Notes in Comput. Sci., 9374, Springer, Cham, 2015.

- 21. Krastanov, Mikhail I.,** Nadezhda Ribarska, Tsvetomir Tsachev, On the geometry of the Pontryagin maximum principle in Banach spaces. Set-Valued Var. Anal. 23 (2015), no. 3, 443–463. JCR-IF (Web of Science):**0.973(2015)**, Квартил **Q2 (97/254)**  
**Mathematics Applied**
- 22. Dontchev, Asen L.; Mikhail I. Krastanov,** Vladimir M. Veliov,  $\omega$ -limit sets for differential inclusions. Analysis and geometry in control theory and its applications, 159–169, Springer INdAM Ser., 11, Springer, Cham, 2015. SJR Scopus **0.303 (2015)**
- 23. Dimitrova, Neli S., Mikhail I. Krastanov,** Model-based optimization of biogas production in an anaerobic biodegradation process. Computers & Mathematics with applications. 68 (2014), no. 9, 986–993. JCR-IF (Web of Science):**1.697 (2014)**, Квартил **Q1 (26/257)**  
**Mathematics Applied**
- 24. Dimitrova, Neli S., Mikhail I. Krastanov,** New result on the model-based biological control of the chemostat. Applied Mathematics and Computation, 237 (2014), 686–694. JCR-IF (Web of Science):**1.551 (2014)**, Квартил **Q1 (35/257)**  
**Mathematics Applied**
- 25. Krastanov, Mikhail I.,** Quincampoix, Marc, On the controllability of a class of hybrid control systems. Large-scale scientific computing, 107–115, Lecture Notes in Comput. Sci., 8353, Springer, Heidelberg, 2014.
- 26. Dontchev, Asen L.; Mikhail I. Krastanov,** Rockafellar, R. T., Vladimir M. Veliov, An Euler-Newton continuation method for tracking solution trajectories of parametric variational inequalities. SIAM J. Control Optim. 51 (2013), no. 3, 1823–1840. JCR-IF (Web of Science):**1.389(2013)**, Квартил **Q1 (46/251)**  
**Mathematics Applied**

27. **Krastanov, Mikhail I.,** Quincampoix, Marc, On the small-time controllability of discontinuous piece-wise linear systems. *Systems Control Lett.* 62 (2013), no. 2, 218–223. JCR-IF (Web of Science):1.886(2013), Квартил **Q1 (13/79) Operations Research & Management Science**
  
28. **Dimitrova, Neli S., Mikhail I. Krastanov,** Output feedback stabilization of an anaerobic digestion model. *Доклади на БАН* 66 (2013), no. 4, 493–502. JCR-IF (Web of Science):0.198 (2013), Квартил **Q4 (49/55) Multidisciplinary Sciences**
  
29. **Krastanov, Mikhail I.,** Nadezhda Ribarska, Viability and an Olech type result, *Serdica Mathematical Journal* 39 (2013), no. 3-4, 423-456.
  
30. **Dimitrova, Neli S., Mikhail I. Krastanov,** Nonlinear adaptive stabilizing control of an anaerobic digestion model with unknown kinetics. *Internat. J. Robust Nonlinear Control* 22 (2012), no. 15, 1743–1752. JCR-IF (Web of Science):1.900 (2012), Квартил **Q1 (15/247) (top 10% Mathematics Applied)**
  
31. **Dimitrova, Neli S., Mikhail I. Krastanov,** On the asymptotic stabilization of an anaerobic digestion model with unknown kinetics, *WSEAS Transactions on Systems*, 11(7), pp. 244-255, 2012, **SJR Scopus 0.277 (2012)**
  
32. **Dimitrova, Neli S., Mikhail I. Krastanov,** On the asymptotic stabilization of an uncertain bioprocess model. *Large-scale scientific computing*, 115–122, *Lecture Notes in Computer Sciences*, 7116, Springer, Heidelberg, 2012. **SJR Scopus 0.346 (2012)**
  
33. **Krastanov, Mikhail I.,** On the small-time local controllability. *J. Convex Anal.* 19 (2012), no. 4, 1073–1090. JCR-IF (Web of Science):0.625/2012, Квартил **Q2 (124/296) Mathematics**
  
34. **Krastanov, Mikhail I.,** Nadezhda Ribarska, Tsachev, Tsvetomir Y., A Pontryagin maximum principle for infinite-dimensional problems. *SIAM J. Control Optim.* 49 (2011), no. 5, 2155–2182.

JCR-IF (Web of Science):**1.518 (2011)**, Квартил **Q1 (26/245)**  
**Mathematics Applied**

35. **Krastanov, Mikhail I.,** Vladimir M. Veliov, High-order approximations to nonholonomic affine control systems, Lecture Notes in Computer Science, LNCS 5910, 304-314, **2010**. SJR Scopus **0.322 (2011)**
36. **Dimitrova, Neli S., Mikhail I. Krastanov,** Nonlinear adaptive control of a model of an uncertain fermentation process. Internat. J. Robust Nonlinear Control 20 (**2010**), no. 9, 1001–1009. JCR-IF (Web of Science):**1.518 (2011)**, Квартил **Q1 (26/245)**  
**Mathematics Applied**
37. **Krastanov, Mikhail I.,** High-order variations and small-time local attainability. Control Cybernet. 38 (**2009**), no. 4B, 1411–1427. JCR-IF (Web of Science):**0.378 (2009)**, Квартил **Q4 (17/19)**  
**Automation & Control systems**
38. **Dimitrova, Neli S., Mikhail I. Krastanov,** Nonlinear stabilizing control of an uncertain bioprocess model. Int. J. Appl. Math. Comput. Sci. 19 (**2009**), no. 3, 441–454.
39. **Krastanov, Mikhail I.,** A sufficient condition for small-time local controllability. SIAM J. Control Optim. 48 (**2009**), no. 4, 2296–2322. JCR-IF (Web of Science):**1.546 (2009)**, Квартил **Q1 (32/204)**  
**Mathematics Applied**
40. **Krastanov, Mikhail I.,** On the constrained small-time controllability of linear systems. Automatica J. IFAC 44 (2008), no. 9, 2370–2374. JCR-IF (Web of Science):**3.178 (2008)**, Квартил **Q1 (6/59)** **Automation & Control Systems**
41. **Krastanov, Mikhail I.,** Nadezhda Ribarska, Tsachev, Tsvetomir Y., On the existence of solutions to differential inclusions with nonconvex right-hand sides. SIAM J. Optimization 18 (**2007**), no. 3, 733–751. JCR-IF (Web of Science):**1.288 (2009)**, Квартил **Q1 (25/165)** **Mathematics Applied**

42. **Krastanov, Mikhail I.**, On the synthesis of a stabilizing feedback control. Large-scale scientific computing, 239–246, Lecture Notes in Comput. Sci., 3743, Springer, Berlin, **2006**. SJR Scopus **0.317 (2006)**
  
43. **Dimitrova, Neli S.; Krastanov, Mikhail I.**, Stabilization of a nonlinear anaerobic wastewater treatment model. Large-scale scientific computing, 208–215, Lecture Notes in Comput. Sci., 3743, Springer, Berlin, **2006**. SJR Scopus **0.317 (2006)** .
  
44. **Krastanov, Mikhail I.**, Malisoff, Michael; Wolenski, Peter On the strong invariance property for non-Lipschitz dynamics. Communications on Pure & Applied Analysis 5 (**2006**), no. 1, 107–124. JCR-IF (Web of Science):**0.886 (2006)**, Квартил **Q2 (55/150) Mathematics Applied**
  
45. **Krastanov, Mikhail I.**, Vladimir M. Veliov, On the controllability of switching linear systems. Automatica J. IFAC 41 (**2005**), no. 4, 663–668. . JCR-IF (Web of Science):**1.693 (2005)**, Квартил **Q1 (6/46) (Automation & Control Systems)**
  
46. Kirov, Nikolay; **Mikhail I. Krastanov**, Volterra Series and Numerical Approximations of ODEs. Numerical Analysis and Its Applications, Lecture Notes in Computer Science 3401, 3401, 2005, DOI:10.1007/978-3-540-31852-1\_40, 337-344
  
47. **Krastanov, Mikhail I.**, Vladimir M. Veliov, On the stabilizability of control constrained linear systems. Numerical methods and applications, 238–245, Lecture Notes in Comput. Sci., 2542, Springer, Berlin, **2003**. SJR Scopus **0.410 (2003)** .
  
48. **Krastanov, Mikhail I.**, Neli S. Dimitrova, Stabilizing feedback of a nonlinear process involving uncertain data, Bioprocess and Biosystems Engineering 25(4), pp. 217-220, 2003. JCR-IF (Web of Science): **0.986 (2003)** Квартил **Q3 (80/132) Biotechnology**.
  
49. **Krastanov, Mikhail I.**, A sufficient condition for small-time local attainability of a set. Well-posedness in optimization and related topics (Warsaw, 2001). Control Cybernet. 31 (**2002**), no. 3,

739–750. JCR-IF (Web of Science):**0.326 (2002)**, Квартил **Q3 (34/49) Automation & Control Systems**

- 50.**Krastanov, Mikhail**; Quincampoix, Marc Local small time controllability and attainability of a set for nonlinear control system. ESAIM Control Optim. Calc. Var. 6 (2001), 499–516.
- 51.Ribarska, Nadezhda; Tsvetomir Y. Tsachev, **Mikhail I., Krastanov**, A note on: "On a critical point theory for multivalued functionals and application to partial differential inclusions" [Nonlinear Anal. 31 (1998), no. 5-6, 735–753; MR1487858] by M. Frigon. Nonlinear Anal. 43 (2001), no. 2, Ser. A: Theory Methods, 153–158. JCR-IF (Web of Science):**0.406 (2001)**, Квартил **Q3 (81/161) Mathematics**
- 52.Ribarska, Nadezhda; Tsvetomir Y. Tsachev, **Mikhail I., Krastanov**, The intrinsic mountain pass principle. Comptes Rendus de l'Académie des Sciences - Series I – Mathematics 329 (1999), no. 5, 399–404. JCR-IF (Web of Science):**0.291 (1999)**, Квартил **Q3 (93/145)**
- 53.Ribarska, Nadezhda; Tsvetomir Y. Tsachev, **Mikhail I., Krastanov**, The intrinsic mountain pass principle. Topological Methods in Nonlinear Analysis 12 (1998), no. 2, 309–322.
- 54.**Krastanov, Mikhail I.**, A necessary condition for small time local controllability. Journal Dynamical Control Systems 4 (1998), no. 3, 425–456.
- 55.N.K.Ribarska, Ts.Y.Tsachev, **M.I.Krastanov**, A saddle point theorem without a finite dimensional closed loop, C.R. Acad. Bulg. Sci., том:51, брой:11-12, 1998, стр.13-16
- 56.Ribarska, Nadezhda; Tsvetomir Y. Tsachev, **Mikhail I., Krastanov**, Speculating about mountains. Well-posedness and stability of variational problems. Serdica Math. J. 22 (1996), no. 3, 239–256.



57. Ribarska, Nadezhda; Tsvetomir Y. Tsachev, **Mikhail I., Krastanov**, Deformation lemma, Ljusternik-Schnirellmann theory and mountain pass theorem on  $C^1$ -Finsler manifolds. *Serdica Math. J.* 21 (1995), no. 3, 239–266.
58. **Krastanov, Mikhail I.**, Forward invariant sets, homogeneity and small-time local controllability. *Geometry in nonlinear control and differential inclusions* (Warsaw, 1993), 287–300, Banach Center Publ., 32, Polish Acad. Sci. Inst. Math., Warsaw, 1995.
59. Ribarska, Nadezhda; Tsvetomir Y. Tsachev, **Mikhail I., Krastanov**, Deformation lemma on  $C^1$ -Finsler manifolds and applications. *C. R. Acad. Bulgare Sci.* 47 (1994), no. 1, 13–16.
60. **Krastanov, Mikhail I.**, Vladimir M. Veliov, Local controllability of state constrained linear systems. *Acta Univ. Lodz. Folia Math.* No. 5 (1992), 103–112 (1993).
61. Ribarska, Nadezhda; Tsvetomir Y. Tsachev, **Mikhail I., Krastanov**, On the general mountain pass principle of Ghoussoub-Preiss. *Math. Balkanica (N.S.)* 5 (1991), no. 4, 350–358.
62. **Veliov, Vladimir M.; Krastanov, Mikhail I.**, Controllability of piecewise linear systems. *Systems Control Lett.* 7 (1986), no. 5, 335–341.