

I hereby certify that this document is an up to date and accurate Curriculum Vitae.

Saša V. Raković, Ph.D. DIC

  
Saša V. Raković

London, UK, December 12, 2017

### Academic Experience

06/2017 – present	<i>Independent Researcher.</i>
10/2016 – 05/2017	<b>University of Porto</b> , Porto, Portugal <i>Visiting Research Scholar</i> , FEUP.
06/2016 – 10/2016	<b>Texas A&amp;M University</b> , College Station, USA <i>Visiting Research Scholar</i> , Energy Institute.
05/2015 – 06/2016	<b>The University of Texas</b> , Austin, USA <i>Visiting Research Scholar</i> , Center for Space Research.
10/2014 – 04/2015	<i>Independent Researcher.</i>
07/2012 – 09/2014	<b>Oxford University</b> , Oxford, UK <i>Member of Senior Common Room</i> , St Edmund Hall.
04/2014 – 08/2014	<b>Supélec</b> , Gif-sur-Yvette, France <i>Visiting Research Scholar</i> , Automatic Control Department.
02/2012 – 07/2012	<b>The University of Maryland</b> , College Park, USA <i>Visiting Assistant Professor</i> , Institute for Systems Research.
07/2009 – 10/2011	<b>Oxford University</b> , Oxford, UK <i>Visiting Academic Fellow</i> , Control Group.
04/2009 – 12/2011	<b>The Otto-von-Guericke-Universität Magdeburg</b> , Magdeburg, Germany <i>Scientific Associate</i> , Institute for Automation Engineering.
12/2008 – 12/2009	<b>Imperial College London</b> , London, UK <i>Honorary Research Associate</i> , Centre for Process Systems Engineering.
11/2006 – 11/2008	<b>Eidgenössische Technische Hochschule Zürich (ETH Zürich)</b> , Zürich, Switzerland <i>Postdoctoral Researcher</i> , Automatic Control Laboratory.
11/2001 – 11/2006	<b>Imperial College London</b> , London, UK <i>Postdoctoral Research Associate</i> , Control and Power Group.

### Education

2001 – 2005	<b>Imperial College London</b> , London, UK
Degree	<i>Ph.D. in Control Theory.</i>
Dissertation	“Robust Control of Constrained Discrete Time Systems: Characterization and Implementation”.
Award	The Eryl Cadwaladr Davies Prize 2005.
2000 – 2001	<b>Imperial College London</b> , London, UK
Degree	<i>M.Sc. in Control Engineering, and DIC (Diploma of Imperial College).</i>
Thesis	“Medical Application of Feedback Control”.
1993 – 1999	<b>The University of Kragujevac, Technical Faculty of Čačak</b> , Čačak, Serbia
Degree	<i>B.Eng. in Mechatronics.</i>
Final Project	“Temperature Control of an Industrial Oven”.
Award	The Dr. Milivoje Urošević Fund Award 1999.

### Impact Indicators (Google Scholar Statistics On December 12, 2017)

Publications	Total	95 (+10)	H-Index	28	i10-Index	54
Citations	Total	3783	Per year	236	Per publication	40
Average citations	Top 5 publications	352	Top 10 publications	230	Top 28 publications	115

### Honors and Awards

2015 and 2007	The IFAC journal <i>Automatica</i> 2014 and 2006 <i>Outstanding reviewer for Automatica.</i>
2005	The Eryl Cadwaladr Davies Prize 2005 <i>The best Ph.D. thesis in the EEE Department of Imperial College London.</i>
1999	The Dr. Milivoje Urošević Fund Award 1999 <i>The best student of the generation at the Technical Faculty of Čačak.</i>
1999	The Republic Centre for Talents from Science of Serbia and Montenegro Diploma and Gold Medal <i>For accomplishments in natural and technical sciences.</i>

---

## Current Research Focus Areas

### Controls, Dynamics and Optimization

Conventional, robust and stochastic optimal and model predictive control; Optimization for analysis and synthesis of dynamic and static systems, and decision making, under constraints and uncertainty.

### Smart Autonomous and Cyber-Physical Systems

Agility and composability; fault tolerance and reconfigurability; intelligent functionality; multi-system formations with collaborative and coordinated operability; reliability and safety; security and resilience.

---

## Main Technical Expertise

### Control Synthesis

Conventional, robust and stochastic optimal and model predictive control; dynamic programming.

### Optimization-based Analysis and Synthesis

Design of specification, resource and performance optimal systems under constraints and uncertainty.

### Set-Valued Analysis and Synthesis

Reachability and estimation; safety, reliability, security and resilience; set invariance and stability.

---

## Distinguished Contributions

### Model Predictive Control

Contributions Robust model predictive control.  
Stochastic model predictive control.  
Tube model predictive control.

Publications [4–6, 13–15, 17, 25, 29, 34, 35, 42, 61, 76, 81, 86, 93].

### Set Invariance

Contributions Minimal invariant sets.  
Set invariance under output feedback.  
Invariant approximations of minimal and maximal invariant sets.

Publications [20, 23, 26, 27, 33, 68, 70].

### Optimization-based and Set-Valued Analysis and Synthesis

Contributions Minkowski–Lyapunov equation.  
Real-time computations of invariant sets and Lyapunov functions.  
Exact and approximate, backward and forward, reachability analysis under constraints and uncertainty.

Publications [8–10, 16, 23, 24, 27, 30, 33, 65, 67–69, 71, 75, 79].

---

## Plenary Talks

### Plenary Talk

August, 2012 *“Invention of Prediction Structures and Categorization of Robust MPC Syntheses”*  
The 4<sup>th</sup> IFAC Conference on Nonlinear Model Predictive Control 2012, NMPC’12.

### Semi-Plenary Talk

September, 2008 *“Set-Theoretic Methods in Model Predictive Control”*  
The 3<sup>rd</sup> IFAC Conference on Nonlinear Model Predictive Control 2008, NMPC’08.

---

## Invited Lecture Courses

10/2015 *“Model Predictive Control Synthesis”*. The University of Texas at Austin.  
06/2011 & 07/2012 *“Tube Model Predictive Control”*. The University of Stuttgart.  
03/2012 – 04/2012 *“Set-Valued Dynamical Systems”*. The University of Maryland at College Park.  
03/2008 *“An Introduction to Set Theoretic Methods in Control”*. The University of Seville.

---

## Invited Talks and Conference Presentations

Delivered at least 40 invited seminars at leading universities worldwide including, *inter alia*, Imperial College London, Cambridge University, Oxford University, ETH Zürich, KU Leuven, Supélec, TU Eindhoven, UT at Austin, UM at Ann Arbour, UMD at College Park, UC at Santa Barbara, UW at Seattle, Texas A&M University and Tel Aviv University.

Delivered at least 50 presentations at key international conferences in control theory and engineering.

---

## Memberships

2011 – Present Member of the IFAC Technical Committee on Nonlinear Control Systems.

2012 – 2014 and

2009 – 2011

Member of the Senior Common Room at St Edmund Hall of Oxford University.

---

## Selected Synergistic Activities

- Organizer, with James B. Rawlings and Ilya V. Kolmanovsky, of the first, NSF funded, American summer school of model predictive control.
- Editor, with William S. Levine, of the handbook of model predictive control.
- Frequent Organizer of conference sessions and workshops at IEEE, IFAC and SIAM conferences.
- Frequent reviewer for a number of major international journals and conferences in controls.
- International program committee member, the IFAC conference on nonlinear model predictive control 2012. (Noordwijkerhout, The Netherlands, August 2012.)

---

## Publications Breakdown

1 Ph.D. thesis	1 Edited book	1 Book review	3 Book chapters
31 Journal articles	60 Conference papers	8 in preparation	2 in review and revision

---

## Ph.D. Thesis (1 out of 1)

- [1] Saša V. Raković. *Robust Control of Constrained Discrete Time Systems: Characterization and Implementation*. Ph.D. thesis, Imperial College London, London, United Kingdom, September 2005.

---

## Edited Books (1 out of 1)

- [2] S. V. Raković and W. S. Levine. *Handbook of Model Predictive Control*. Birkhäuser. Currently being finalized.

---

## Book Reviews (1 out of 1)

- [3] S. V. Raković. *Model Predictive Control: Classical, Robust and Stochastic* by Basil Kouvaritakis and Mark Cannon. *IEEE Control Systems Magazine*, 36(6): 102–105, 2016.

---

## Book Chapters (3 out of 3)

- [4] S. V. Raković. Robust Model Predictive Control. Invited Paper in *Encyclopedia of Systems and Control*: 1225–1233, 2015, Editors-in-Chief: J. Baillieul and T. Samad, Springer-Reference, 2015. (Also Available Online.)
- [5] S. V. Raković. Set Theoretic Methods in Model Predictive Control. Invited Paper in *Assessment and Future Directions of Nonlinear Model Predictive Control*, Lecture Notes in Control and Information Sciences, 384/2009 : 41–54, 2009, Editors: L. Magni, D. Raimondo and F. Allgöwer, Springer-Verlag, Berlin – Heidelberg, 2009.
- [6] S. V. Raković and D. Q. Mayne. Robust Model Predictive Control for Obstacle Avoidance: Discrete Time Case. *Assessment and Future Directions of Nonlinear Model Predictive Control*, Lecture Notes in Control and Information Sciences, 358/2007 : 617–627, 2007, Editors: R. Findeisen, L. B. Biegler and F. Allgöwer, Springer-Verlag, Berlin, 2007.

---

## Journal Articles (31 out of 31)

- [7] U. Eren, A. Prach, B. B. Kocer, S. V. Raković, E. Kayacan and B. Açikmeşe. Model Predictive Control in Aerospace Systems: Current State and Opportunities. *Journal of Guidance, Control, and Dynamics*, 40(7): 1541–1566, 2017.
- [8] S. V. Raković. The Minkowski–Lyapunov Equation. *Automatica*, 75(1): 32–36, 2017.
- [9] S. V. Raković and M. Lazar. The Minkowski–Lyapunov Equation for Linear Dynamics: Theoretical Foundations. *Automatica*, 50(8): 2015–2024, 2014.
- [10] S. V. Raković and R. Gielen. Positively Invariant Families of Sets for Interconnected and Time–Delay Discrete–Time Systems. *SIAM Journal on Control and Optimization*, 52(4): 2261–2283, 2014.
- [11] V. Janković, B. Marinković and S. V. Raković. Motzkin’s Theorem of the Alternative : A Continuous Time Generalization. *Optimization Letters*, 7(8): 1659–1668, 2013.
- [12] R. Gielen, M. Lazar and S. V. Raković. Necessary and Sufficient Razumikhin–like Conditions for Stability of Delay Difference Equations. *IEEE Transactions on Automatic Control*, 58(10): 2637–2642, 2013.
- [13] S. V. Raković, B. Kouvaritakis and M. Cannon. Equi–Normalization and Exact Scaling Dynamics in Homothetic Tube Model Predictive Control. *System & Control Letters*, 62(2) : 209–217, 2013.
- [14] S. V. Raković, B. Kouvaritakis, M. Cannon and C. Panos. Fully Parameterized Tube Model Predictive Control. *International Journal of Robust and Nonlinear Control* : Special Issue to Commemorate the Work of Professor David W. Clarke, 22(12) : 1330–1361, 2012.
- [15] S. V. Raković, B. Kouvaritakis, M. Cannon, C. Panos and R. Findeisen. Parameterized Tube Model Predictive Control. *IEEE Transactions on Automatic Control*, 57(11): 2746–2761, 2012.
- [16] S. V. Raković and M. Lazar. Minkowski Terminal Cost Functions for MPC. *Automatica*, 48(10) : 2721–2725, 2012.

---

## Journal Articles (31 out of 31 – Continued)

- [17] S. V. Raković, B. Kouvaritakis, R. Findeisen and M. Cannon. Homothetic Tube Model Predictive Control. *Automatica*, 48(8) : 1631–1638, 2012.
- [18] M. Cannon, Q. Cheng, B. Kouvaritakis and S. V. Raković. Stochastic Tube MPC With State Estimation. *Automatica*, 48(3) : 536–541, 2012.
- [19] M. Cannon, J. Buerger, B. Kouvaritakis, and S. V. Raković. Robust Tubes in Nonlinear Model Predictive Control. *IEEE Transactions on Automatic Control*, 56(8) : 1942–1948, 2011.
- [20] Zvi Artstein and Saša V. Raković. Set Invariance Under Output Feedback: A Set–Dynamics Approach. *International Journal of Systems Science*, 42(4) : 539–555, 2011.
- [21] M. Cannon, B. Kouvaritakis, S. V. Raković and Q. Cheng. Stochastic Tubes in Model Predictive Control With Probabilistic Constraints. *IEEE Transactions on Automatic Control*, 56(1) : 194–200, 2011.
- [22] B. Kouvaritakis, M. Cannon, S. V. Raković and Q. Cheng. Explicit Use of Probabilistic Distributions in Linear Predictive Control. *Automatica*, 46(10) : 1719–1724, 2010.
- [23] Saša V. Raković and Miroslav Barić. Parameterized Robust Control Invariant Sets for Linear Systems: Theoretical Advances and Computational Remarks. *IEEE Transactions on Automatic Control*, 55(7) : 1599–1614, 2010.
- [24] Saša V. Raković and Miroslav Barić. Local Control Lyapunov Functions for Constrained Linear Discrete Time Systems: The Minkowski Algebra Approach. *IEEE Transactions on Automatic Control*, 54(11) : 2686–2692, 2009.
- [25] D. Q. Mayne, S. V. Raković, R. Findeisen and F. Allgöwer. Robust Output Feedback Model Predictive Control of Constrained Linear Systems: Time Varying Case. *Automatica*, 45(9) : 2082–2087, 2009.
- [26] Zvi Artstein and Saša V. Raković. Feedback and Invariance under Uncertainty via Set–Iterates. *Automatica*, 44(2) : 520–525, 2008.
- [27] S. V. Raković, E. C. Kerrigan, D. Q. Mayne and K. I. Kouramas. Optimized Robust Control Invariance for Linear Discrete–Time Systems: Theoretical Foundations. *Automatica*, 43(5) : 831–841, 2007.
- [28] C. N. Jones, P. Grieder, and S. V. Raković. A Logarithmic–Time Solution to the Point Location Problem for Parametric Linear Programming. *Automatica*, 42(12) : 2215–2218, 2006.
- [29] D. Q. Mayne, S. V. Raković, R. Findeisen and F. Allgöwer. Robust Output Feedback Model Predictive Control of Constrained Linear Systems. *Automatica*, 42(7) : 1217–1222, 2006.
- [30] S. V. Raković, E. C. Kerrigan, D. Q. Mayne and J. Lygeros. Reachability Analysis of Discrete–Time Systems with Disturbances. *IEEE Transactions on Automatic Control*, 51(4) : 546–562, 2006.
- [31] D. Q. Mayne, S. V. Raković, R. B. Vinter and E. C. Kerrigan. Characterization of the Solution to a Constrained  $H_\infty$  Optimal Control Problem. *Automatica*, 42(3) : 371–382, 2006.
- [32] D. Q. Mayne and S. V. Raković. Correction to Model Predictive Control of Constrained Piecewise Affine Discrete–Time Systems, *International Journal of Robust and Nonlinear Control*, volume 13, issue 3–4, pages 261–279. *International Journal of Robust and Nonlinear Control*, 15(6) : 291, 2005.
- [33] S. V. Raković, E. C. Kerrigan, K. I. Kouramas and D. Q. Mayne. Invariant Approximations of the Minimal Robustly Positively Invariant Set. *IEEE Transactions on Automatic Control*, 50(3) : 406–410, 2005.
- [34] D. Q. Mayne, M. M. Seron and S. V. Raković. Robust Model Predictive Control of Constrained Linear Systems with Bounded Disturbances. *Automatica*, 41(2) : 219–224, 2005.
- [35] W. Langson, I. Chrysoschoos, S. V. Raković, and D. Q. Mayne. Robust Model Predictive Control Using Tubes. *Automatica*, 40(1) : 125–133, 2004.
- [36] D. Q. Mayne and S. Raković. Model Predictive Control of Constrained Piecewise Affine Discrete–Time Systems. *International Journal of Robust and Nonlinear Control*, 13(3–4) : 261–279, 2003.
- [37] D. Q. Mayne and S. Raković. Optimal Control of Constrained Piecewise Affine Discrete–Time Systems. *Journal of Computational Optimization and Applications*, 25(1–3) : 167–191, 2003.

---

## Peer–Reviewed Conference Contributions (60 out of 60)

- [38] S. V. Raković, F. A. C. C. Fontes and I. V. Kolmanovsky. Reachability and Invariance for Linear Sampled–data Systems. In *Proceedings of the 20th IFAC World Congress IFAC 2017*, Toulouse, France, July 2017.
- [39] F. A. C. C. Fontes, S. V. Raković and I. V. Kolmanovsky. Rigid Tube MPC for Linear Sampled–data Systems. In *Proceedings of the 20th IFAC World Congress IFAC 2017*, Toulouse, France, July 2017.
- [40] S. V. Raković, W. S. Levine and B. Açikmeşe. Continuously Generalized Model Predictive Control. In *Proceedings of the 55th IEEE Conference on Decision and Control CDC 2016*, Las Vegas, NV, USA, December 2016.
- [41] D. Dueri, S. V. Raković, and B. Açikmeşe. Consistently Improving Approximations for Constrained Controllability and Reachability. In *Proceedings of the 15th European Control Conference ECC 2016*, Aalborg, Denmark, June & July, 2016.

- [42] S. V. Raković, W. S. Levine and B. Ačkmeşe. Elastic Tube Model Predictive Control. In *Proceedings of the 2016 American Control Conference ACC 2016*, Boston, MA, USA, July 2016.
- [43] S. V. Raković, W. S. Levine and B. Ačkmeşe. Discretely Generalized Model Predictive Control. In *Proceedings of the 2016 American Control Conference ACC 2016*, Boston, MA, USA, July 2016.
- [44] S. V. Raković and W. S. Levine. Model Predictive Control with Generalized Terminal Conditions. Abstract In *Proceedings of the 13th Viennese Workshop on Optimal Control and Dynamic Games*, Vienna, Austria, May 2015.
- [45] S. V. Raković and W. S. Levine. Separable Prediction Structures in Model Predictive Control Under Uncertainty. Abstract In *Proceedings of the SIAM Conference on Control & Its Applications CT2013*, San Diego, CA, USA, July 2013.
- [46] S. V. Raković and Q. Cheng. Homothetic Tube MPC for Constrained Linear Difference Inclusions. In *Proceedings of the 25th Chinese Control and Decision Conference CCDC 2013*, Guiyang, China, May 2013.
- [47] S. V. Raković, I. Matei and J. S. Baras. Reachability Analysis for Linear Discrete Time Set-Dynamics Driven by Random Convex Compact Sets. In *Proceedings of the 51st IEEE Conference on Decision and Control CDC 2012*, Maui, HI, USA, December 2012.
- [48] S. V. Raković, D. M. Carpinero, M. Cannon and B. Kouvaritakis. Offline Tube Design for Efficient Implementation of Parameterized Tube Model Predictive Control. In *Proceedings of the 51st IEEE Conference on Decision and Control CDC 2012*, Maui, HI, USA, December 2012.
- [49] S. V. Raković. Invention of Prediction Structures and Categorization of Robust MPC Syntheses. In *Proceedings of the IFAC Conference on Nonlinear Model Predictive Control NMPC 2012*, Noordwijkerhout, the Netherlands, August 2012.
- [50] R. Gielen, S. V. Raković and M. Lazar. Further Results on the Construction of Invariant Families of Sets for Linear Systems with Delay. In *Proceedings of the 10th IFAC Workshop on Time Delay Systems TDS 2012*, Boston, USA, June 2012.
- [51] S. V. Raković, R. Gielen and M. Lazar. Construction of Invariant Families of Sets for Linear Systems with Delay. In *Proceedings of the 2012 American Control Conference ACC 2012*, Montréal, Canada, June 2012.
- [52] S. V. Raković, B. Kouvaritakis, M. Cannon, C. Panos and R. Findeisen. Fully Parameterized Tube Model Predictive Control. In *Proceedings of the 18th IFAC World Congress IFAC 2011*, Milan, Italy, September 2011.
- [53] S. V. Raković, B. Kern and R. Findeisen. Practical Robust Positive Invariance for Large-Scale Discrete Time Systems. In *Proceedings of the 18th IFAC World Congress IFAC 2011*, Milan, Italy, September 2011.
- [54] S. Borchers, S. V. Raković and R. Findeisen. Set Membership Parameter Estimation and Design of Experiments Using Homothety. In *Proceedings of the 18th IFAC World Congress IFAC 2011*, Milan, Italy, September 2011.
- [55] S. V. Raković, B. Kern and R. Findeisen. Practical Set Invariance for Decentralized Discrete Time Systems. In *Proceedings of the 49th IEEE Conference on Decision and Control CDC 2010*, Atlanta, GA, USA, December 2010.
- [56] B. Kouvaritakis, M. Cannon, S. V. Raković and Q. Cheng. Explicit Use of Probabilistic Distributions in Linear Predictive Control. In *Proceedings of the UKACC International Conference on Control UKACC 2010*, Coventry, UK, September 2010.
- [57] M. Cannon, J. Buerger, B. Kouvaritakis, and S. V. Raković. Robust Tubes in Nonlinear Model Predictive Control. In *Proceedings of the 8th IFAC Symposium on Nonlinear Control Systems NOLCOS 2010*, Bologna, Italy, September 2010.
- [58] B. Kouvaritakis, M. Cannon, S. V. Raković and Q. Cheng. Stochastic Tube MPC With State Estimation. In *Proceedings of the 19th International Symposium on Mathematical Theory of Networks and Systems MTNS 2010*, Budapest, Hungary, July 2010.
- [59] S. V. Raković, B. Kouvaritakis, R. Findeisen and M. Cannon. Simple Homothetic Tube Model Predictive Control. In *Proceedings of the 19th International Symposium on Mathematical Theory of Networks and Systems MTNS 2010*, Budapest, Hungary, July 2010.
- [60] B. Kouvaritakis, M. Cannon, S. V. Raković and Q. Cheng. Stochastic Tubes in Model Predictive Control With Probabilistic Constraints. In *Proceedings of the 2010 American Control Conference ACC2010*, Baltimore, Maryland, USA, July 2010.
- [61] S. V. Raković. Tube Model Predictive Control. Contribution to Tutorial Session "Output Feedback Control Under Set-membership Uncertainty : Theory, Computation and Applications ", In *Proceedings of the 48th IEEE Conference on Decision and Control CDC 2009*, Shanghai, China, December 2009.
- [62] F. Blanchini and S. V. Raković. Controllability and Reachability under Set-Valued Constraints and Disturbances : Directions and Challenges. Contribution to Tutorial Session "Output Feedback Control Under Set-membership Uncertainty : Theory, Computation and Applications ", In *Proceedings of the 48th IEEE Conference on Decision and Control CDC 2009*, Shanghai, China, December 2009.
- [63] S. V. Raković, M. Kearney and P. Ross McAree. Robust Control Correction Synthesis: A Set-Theoretic Approach. In *Proceedings of the 7th International Conference on Control and Automation ICCA 2009*, Christchurch, New Zealand, December, 2009.
- [64] M. Kearney, S. V. Raković and P. Ross McAree. Control Correction Synthesis: A Set-Theoretic Approach. In *Proceedings of the 10th European Control Conference ECC 2009*, Budapest, Hungary, August 2009.

- [65] S. V. Raković, M. Barić and M. Morari. Max–Min Control Problems for Constrained Discrete Time Systems. In *Proceedings of the 47th IEEE Conference on Decision and Control CDC 2008*, Cancun, Mexico, December 2008.
- [66] S. V. Raković. Set Theoretic Methods in Model Predictive Control. In *Proceedings of the International Workshop on Assessment and Future Directions of Nonlinear Model Predictive Control – NMPC'08*, Pavia, Italy, September 2008.
- [67] M. Barić, S. V. Raković, T. Besselmann and M. Morari. Max–Min Optimal Control of Constrained Discrete Time Systems. In *Proceedings of the 17th IFAC World Congress IFAC 2008*, Seoul, Korea, July 2008.
- [68] S. V. Raković and M. Fiacchini. Invariant Approximations of the Maximal Invariant Set of “Encircling the Square”. In *Proceedings of the 17th IFAC World Congress IFAC 2008*, Seoul, Korea, July 2008.
- [69] S. V. Raković and M. Fiacchini. Approximate Reachability Analysis for Linear Discrete Time Systems Using Homothety and Invariance. In *Proceedings of the 17th IFAC World Congress IFAC 2008*, Seoul, Korea, July 2008. Invited Session.
- [70] S. V. Raković. Minkowski Algebra and Banach Contraction Principle in Set Invariance Theory for Linear Discrete Time Systems. In *Proceedings of the 46th IEEE Conference on Decision and Control 2007*, New Orleans, LA, USA, December 2007.
- [71] S. V. Raković and K. I. Kouramas. Invariant Approximations of the Minimal Robust Positively Invariant Set via Finite Time Aumann Integrals. In *Proceedings of the 46th IEEE Conference on Decision and Control 2007*, New Orleans, LA, USA, December 2007.
- [72] S. V. Raković, F. Blanchini, E. Crück and M. Morari. Robust Obstacle Avoidance for Constrained Linear Discrete Time Systems: A Set-Theoretic Approach. In *Proceedings of the 46th IEEE Conference on Decision and Control 2007*, New Orleans, LA, USA, December 2007.
- [73] D. Q. Mayne, S. V. Raković and E. C. Kerrigan. Optimal Control and Piecewise Parametric Programming. In *Proceedings of the 9th European Control Conference*, Kos, Greece, July 2007.
- [74] J. Spjøtvold, E. Kerrigan, S. V. Raković, D. Mayne and T. A. Johansen. Inf–Sup Control of Discontinuous Piecewise Affine Systems. In *Proceedings of the 9th European Control Conference*, Kos, Greece, July 2007.
- [75] S. V. Raković and K. I. Kouramas. The Minimal Robust Positively Invariant Set and Its Invariant Approximations via Finite Time Aumann Integrals. In *Proceedings of the International Congress Nonlinear Dynamical Analysis – 2007 dedicated to the 150th anniversary of A.M.Lyapunov*, Saint Petersburg, Russia, June 2007.
- [76] S. V. Raković, A. R. Teel, D. Q. Mayne and A. Astolfi. Simple Robust Control Invariant Tubes for Some Classes of Nonlinear Discrete Time Systems. In *Proceedings of the 45th IEEE Conference on Decision and Control 2006*, San Diego, CA, USA, December 2006.
- [77] D. Q. Mayne, S. V. Raković, R. Findeisen and F. Allgöwer. Output Feedback Model Predictive Control for Constrained Linear Systems under Uncertainty Based on Feed Forward and Positive Invariant Feedback Control. In *Proceedings of the 45th IEEE Conference on Decision and Control 2006*, San Diego, CA, USA, December 2006.
- [78] S. V. Raković and K. I. Kouramas. State Decomposition Principle in Set Invariance Theory for Linear Discrete Time Systems. In *Proceedings of the 45th IEEE Conference on Decision and Control 2006*, San Diego, CA, USA, December 2006. Invited Session.
- [79] S. V. Raković and K. I. Kouramas. The Minimal Robust Positively Invariant Set for Linear Discrete Time Systems: Approximation Methods and Control Applications. In *Proceedings of the 45th IEEE Conference on Decision and Control 2006*, San Diego, CA, USA, December 2006. Invited Session.
- [80] J. Spjøtvold, S. V. Raković, P. Tøndel and T. A. Johansen. Utilizing Reachability Analysis in Point Location Problems. In *Proceedings of the 45th IEEE Conference on Decision and Control 2006*, San Diego, CA, USA, December 2006. Invited Session.
- [81] S. V. Raković and D. Q. Mayne. Set Robust Control Invariance for Linear Discrete Time Systems. In *Proceedings of the 44th IEEE Conference on Decision and Control and the 8th European Control Conference CDCECC 2005*, Sevilla, Spain, December 2005.
- [82] S. V. Raković and D. Q. Mayne. Robust Time Optimal Obstacle Avoidance Problem for Constrained Discrete Time Systems. In *Proceedings of the 44th IEEE Conference on Decision and Control and the 8th European Control Conference CDCECC 2005*, Sevilla, Spain, December 2005.
- [83] S. V. Raković, E. De Santis and P. Caravani. Invariant Equilibria of Polytopic Games via Optimized Robust Control Invariance. In *Proceedings of the 44th IEEE Conference on Decision and Control and the 8th European Control Conference CDCECC 2005*, Sevilla, Spain, December 2005.
- [84] K. I. Kouramas, S. V. Raković, E. C. Kerrigan, J. C. Allwright and D. Q. Mayne. On the Minimal Robust Positively Invariant Set for Linear Difference Inclusions. In *Proceedings of the 44th IEEE Conference on Decision and Control and the 8th European Control Conference CDCECC 2005*, Sevilla, Spain, December 2005.
- [85] S. V. Raković and D. Q. Mayne. Robust Model Predictive Control for Obstacle Avoidance: Discrete Time Case. In *Proceedings of the International Workshop on Assessment and Future Directions of Nonlinear Model Predictive Control – NMPC'05*, Freudenstadt - Lauterbad, Germany, August 2005.

---

## Peer-Reviewed Conference Contributions (60 out of 60 – Continued)

- [86] S. V. Raković and D. Q. Mayne. A Simple Tube Controller for Efficient Robust Model Predictive Control of Constrained Linear Discrete Time Subject to Bounded Disturbances. In *Proceedings of the 16th IFAC World Congress IFAC 2005*, Praha, Czech Republic, July 2005. Invited Session.
- [87] S. V. Raković and D. Q. Mayne. Regulation of Linear Discrete Time Systems with Positive State and Control Constraints and Bounded Disturbances. In *Proceedings of the 16th IFAC World Congress IFAC 2005*, Praha, Czech Republic, July 2005.
- [88] S. V. Raković, D. Q. Mayne, E. C. Kerrigan and K. I. Kouramas. Optimized Robust Control Invariant Sets for Constrained Linear Discrete-Time Systems. In *Proceedings of the 16th IFAC World Congress on Automatic Control*, Prague, Czech Republic, July 2005.
- [89] C. N. Jones, P. Grieder and S. V. Raković. A Logarithmic-Time Solution to the Point Location Problem for Closed-Form Linear MPC. In *Proceedings of the 16th IFAC World Congress IFAC 2005*, Praha, Czech Republic, July 2005.
- [90] P. Grieder, S. V. Raković, M. Morari and D. Q. Mayne. Invariant Sets for Switched Discrete Time Systems Subject to Bounded Disturbances. In *Proceedings of the 16th IFAC World Congress IFAC 2005*, Praha, Czech Republic, July 2005.
- [91] S. V. Raković and D. Q. Mayne. State Estimation for Piecewise Affine, Discrete Time Systems with Bounded Disturbances. In *Proceedings of the 43rd IEEE Conference on Decision and Control CDC 2004*, Paradise Island, The Bahamas, December 2004.
- [92] S. V. Raković, P. Grieder, M. Kvasnica, D. Q. Mayne and M. Morari. Computation of Invariant Sets for Piecewise Affine Discrete Time Systems Subject to Bounded Disturbances. In *Proceedings of the 43rd IEEE Conference on Decision and Control CDC 2004*, Paradise Island, The Bahamas, December 2004. Invited Session.
- [93] S. V. Raković and D. Q. Mayne. Robust Model Predictive of Constrained Piecewise Affine Discrete Time Systems. In *Proceedings of the 6th IFAC Symposium – NOLCOS2004*, Stuttgart, Germany, September 2004.
- [94] S. V. Raković, E. C. Kerrigan and D. Q. Mayne. Optimal Control of Constrained Piecewise Affine Systems with State- and Input-Dependent Disturbances. In *Proceedings of the 16th International Symposium on Mathematical Theory of Networks and Systems*, Leuven, Belgium, July 2004.
- [95] S. V. Raković, E. C. Kerrigan, K. Kouramas and D. Q. Mayne. Approximation of the Minimal Robustly Positively Invariant Set for Discrete LTI Systems with Persistent State Disturbances. In *Proceedings of the 42nd IEEE Conference on Decision and Control CDC 2003*, Maui, HI, USA, December 2003.
- [96] S. V. Raković, E. C. Kerrigan and D. Q. Mayne. Reachability Computations for Constrained Discrete-Time Systems with State- and Input-Dependent Disturbances. In *Proceedings of the 42nd IEEE Conference on Decision and Control CDC 2003*, Maui, HI, USA, December 2003.
- [97] D. Q. Mayne and S. Raković. Optimal Control of Constrained Piecewise Affine Discrete Time Systems Using Reverse Transformation. In *Proceedings of the 41st IEEE Conference on Decision and Control CDC 2002*, Las Vegas, NV, USA, December 2002.

---

## In Preparation (8 out of 8)

- [98] Robust Model Predictive Control.
- [99] Set-valued and Lyapunov Methods in Model Predictive Control.
- [100] Elastic Tube Model Predictive Control.
- [101] Generalized Model Predictive Control.
- [102] Additively Separable Tube Model Predictive Control.
- [103] Structurally Optimal Parametric Linear Programming.
- [104] The Minkowski-Bellman Equation.
- [105] Model Predictive Control for Linear Sampled-data Systems.

---

## In Review (1 out of 1)

- [106] The Maximal Positively Invariant Set: Polynomial Setting.

---

## In Revision (1 out of 1)

- [107] The Minkowski-Lyapunov Equation: Polytopic Computations.