

# Σταύρος Τουμπής

Πατησίων 76, 104 34, Αθήνα | +210 8203551 | toumpis@aueb.gr

## Ερευνητικά Ενδιαφέροντα

### ΕΦΑΡΜΟΓΕΣ

Ανάλυση της επίδοσης ασύρματων δικτύων (ιδιαίτερως, μαθηματική μοντελοποίηση, εύρεση θεωρητικών φραγμάτων και θεμελιωδών αντισταθμίσεων μεταξύ των διάφορων μετρικών του δικτύου, υπολογισμός ασυμπτωτικών ορίων και εύρεση βέλτιστων πολιτικών, με ή χωρίς τη χρήση προσεγγίσεων). Ανάπτυξη πρωτοκόλλων δρομολόγησης, προσπέλασης μέσου, κατανομής φορτίου, και ελέγχου ισχύος, με έμφαση στη διαστρωματική σχεδίαση. Έμφαση σε ασύρματα δίκτυα αναδυόμενου ερευνητικού ενδιαφέροντος, για παράδειγμα κυψελοειδή δίκτυα 5<sup>ης</sup> γενιάς, δίκτυα αισθητήρων, αδόμητα δίκτυα, υβριδικά κυψελοειδή/αδόμητα δίκτυα, ασύρματα δίκτυα με ανοχή στις καθυστερήσεις, κοκ,

### ΕΡΓΑΛΕΙΑ

Χρήση θεωρίας πιθανοτήτων (ιδιαίτερως θεωρίας στοχαστικών ανελίξεων) αρχικά για την μοντελοποίηση π.χ. της τυχαιότητας στην θέση και κίνηση των κόμβων και της κατανομής του φορτίου και κατόπιν για την ανάλυση της επίδοσης του δικτύου. Χρήση θεωρίας βελτιστοποίησης (ιδιαίτερως μεθόδων αποδόμησης που λαμβάνουν υπόψη την τυχόν ειδική μορφή του δικτύου) για την εύρεση βέλτιστων στρατηγικών τοποθέτησης των κόμβων, δρομολόγησης, κατανομής ισχύος, και γενικά χρήσης των πόρων του δικτύου. Επίσης χρήση θεωρίας πληροφορίας, λογισμού μεταβολών, και άλλων μαθηματικών εργαλείων που εμφανίζονται σε κλάδους της φυσικής όπως ο ηλεκτρομαγνητισμός και η οπτική για να διερευνηθούν αναλογίες μεταξύ των ασύρματων δικτύων και άλλων συστημάτων. Χρήση εξομοιώσεων προκειμένου να αποτιμηθεί η επίδραση προσεγγίσεων στα αποτελέσματα και η χρησιμότητα φραγμάτων.

## Εκπαίδευση

### DOCTOR OF PHILOSOPHY IN ELECTRICAL ENGINEERING | 2003 | STANFORD UNIVERSITY

- Τίτλος Διατριβής: Capacity and Cross-Layer Design of Wireless Ad Hoc Networks
- Advisor: Prof. Andrea J. Goldsmith

### MASTER OF SCIENCE IN MATHEMATICS | 2003 | STANFORD UNIVERSITY

### ΔΙΠΛΩΜΑ ΗΛΕΚΤΡΟΛΟΓΟΥ ΜΗΧΑΝΙΚΟΥ ΚΑΙ ΜΗΧΑΝΙΚΟΥ ΥΠΟΛΟΓΙΣΤΩΝ | 1992-1997 | ΕΘΝΙΚΟ ΜΕΤΣΟΒΙΟ ΠΟΛΥΤΕΧΝΕΙΟ

- Μέσος όρος: 9.38/10.0

## Εργασιακή Εμπειρία

### ΕΠΙΚΟΥΡΟΣ ΚΑΘΗΓΗΤΗΣ | ΤΜΗΜΑ ΠΛΗΡΟΦΟΡΙΚΗΣ ΟΠΑ | 2009-2018

### ΛΕΚΤΟΡΑΣ | ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΥΠΡΟΥ, ΤΜΗΜΑ ΗΛΕΚΤΡΟΛΟΓΩΝ ΜΗΧΑΝΙΚΩΝ ΚΑΙ ΜΗΧΑΝΙΚΩΝ ΥΠΟΛΟΓΙΣΤΩΝ | 2005-2009

SENIOR RESEARCHER | TELECOMMUNICATIONS RESEARCH CENTER VIENNA (FTW.) | 2003-2005

TEACHING/RESEARCH ASSISTANT | STANFORD UNIVERSITY | 1997-2003

## Συμμετοχή σε Ερευνητικά Προγράμματα (αναφέρονται τα σημαντικότερα)

1. **UNSURPASSED (Unmanned Surface Vehicles as Primary Assets for the Coast Guard)**  
Πλαίσιο: Third party HORIZON 2020. Επιστημονικός υπεύθυνος (ΕΥ): Σ. Τουμπής, Προϋπολογισμός: 100,000 ευρώ. Διάρκεια: 2017-2018.
2. **I-CAN (Information-Centric future mobile and wireless Access Networks)**  
Πλαίσιο: ΑΡΙΣΤΕΙΑ ΙΙ. ΕΥ: Γ. Πολύζος. Διάρκεια: 2014-2015.
3. **CROWN (Optimal Control of self-Organized Wireless Networks)**  
Πλαίσιο: ΘΑΛΗΣ. ΕΥ: Άρτεμης Χατζηγεωργίου. Διάρκεια: 2012-2015.
4. **DISCO (Distributed Wireless Communications)**  
Πλαίσιο: ΘΑΛΗΣ. ΕΥ: Γ. Καρυστινός, Διάρκεια: 2012-2015.
5. **NETREFOUND (NETwork Research FOUNDations)**  
Πλαίσιο: FP6 FET STREP. ΕΥ: Λέανδρος Τασσιούλας. Διάρκεια: 2006-2009.
6. **NEWCOM (Network of Excellence in Wireless Communications)**  
Πλαίσιο: FP6 Network of Excellence in Wireless Communications. Διάρκεια: 2004-2007.

## Συμμετοχή σε Επιτροπές Τμήματος

1. Επιτροπή Σπουδών Τμήματος Πληροφορικής (2010-παρόν)
2. Μονάδα Διασφάλισης Ποιότητας (2017-2018)
3. Επιτροπή Μεταπτυχιακού Προγράμματος Σπουδών Επιστήμης Υπολογιστών (2017-παρόν).

## Επίβλεψη διδακτορικών διατριβών

1. Άννα Σιδερά, "Design and Analysis of Novel Routing Protocols for Vehicular Delay-Tolerant Networks" (Πανεπιστήμιο Κύπρου, ολοκληρώθηκε το 2015. Research Co-supervisors: S. Toumpis and Ch. Hadjicostis)
2. Γεώργιος Κονιδάρης, "Network Optimization with Applications to Wireless Networks" (ΟΠΑ, αναμενόμενη ημερομηνία ολοκλήρωσης: 2020)

## Επίβλεψη διπλωματικών εργασιών (ΜΠΣ Επιστήμης Υπολογιστών, ΟΠΑ)

1. Ιωάννης Τσελεκούνης, "A partially separable load balancing problem in wireless sensor networks," 2010.
2. Χρήστος Χριστοδουλέας, "An Overview of Routing Problems and Solutions in Delay Tolerant Networks," 2010.
3. Χρήστος Τσιάρας, "Efficient Minimization of Routing Cost in Delay Tolerant Networks", 2011.
4. Γεώργιος Κονιδάρης, "Flow Optimization in Delay Tolerant Networks by Dual Decomposition: a numerical investigation," 2011.
5. Αργύριος Τασσιόπουλος, "Delay/Cost Tradeoffs in Geographically Routed Delay Tolerant Networks, 2012.
6. Άγγελος Φατούρος, "Power efficient multicasting in wireless ad hoc networks," 2012.
7. Θεοδόσης Πετρίδης, "Caching Algorithms in Cache Networks with dynamic Popularity," 2016.
8. Στυλιανός Καρύδης, "Ανάλυση και Μοντελοποίηση Αλγορίθμων Προσωρινής Αποθήκευσης Αρχείων με Δυναμική Δημοφιλία," 2016.

9. Esmerald Aliaj, "Implementation of DTN routing protocols in USV networks," 2018.

## Αυτόνομη Διδακτική Εμπειρία

1. Μαθηματικά I (ΟΠΑ, 10 φορές)
2. Πιθανότητες (ΟΠΑ, 8 φορές)
3. Ανάλυση Επίδοσης Συστημάτων και Δικτύων (ΟΠΑ, 3 φορές)
4. Θεωρία Πληροφορίας (ΟΠΑ, 3 φορές)
5. Μαθηματικά Υποδείγματα Παραγωγής II (ΟΠΑ, 1 φορά)
6. Στοχαστικές Ανελιξίες (Παν. Κύπρου, 2 φορές και Πολυτεχνείο Βιέννης, 1 φορά)
7. Τυχαία Σήματα και Συστήματα (Παν. Κύπρου, 2 φορές)
8. Ασύρματα Δίκτυα Τηλεπικοινωνιών (Παν. Κύπρου, 2 φορές)
9. Θεωρία Βελτιστοποίησης και Εφαρμογές (Παν. Κύπρου, 1 φορά)
10. Ασύρματα Αδρόμητα Δίκτυα (Πολυτεχνείο Βιέννης, 2 φορές και Πολυτεχνείο Καταλονίας (UPC), 1 φορά σε μάθημα 20 ωρών)

## Άλλη Επιστημονική Δραστηριότητα

1. Steering Committee Chair of WiOpt, 2015-2018
2. Member of the Editorial Board, Computer Networks Journal, 2011-2018
3. Member of the Editorial Board, Performance Evaluation Journal, 2008-2018
4. Technical Program Committee Member για διάφορα συνέδρια, e.g., RAWNET 2008, 2009, 2010, 2011, 2012, and 2017, Chants 2013, 2014, 2015, 2016, και 2017 Valuetools 2014, WONS 2006, 2016, 2017, και 2018, AOC 2013, MEDHOCNET 2006, IWVAN 2006, IWCLD 2009 και 2011, Infocom MOVE 2007 και 2008, PIMRC 2008, ICC NETSTAT 2013, ICC 2007, 2009, 2010, 2011, και 2012, SECON 2007, SPAWC 2018,, WiOpt 2015, ISCC 2011.
5. Technical Program Committee co-chair for Valuetools 2008.
6. Reviewer για πολυάριθμα συνέδρια και περιοδικά.
7. Μέλος οργανωτικής επιτροπής διάφορων συνεδρίων, ενδεικτικά:
  - a. [Webmaster for Infocom 2007](#),
  - b. [Local Organization Chair, CTW 2016](#)
8. Guest Editor σε τεύχη επιστημονικών περιοδικών
  - a. [Performance Evaluation, July 2013](#), Selected Papers from the 9th Intl. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt 2011)
  - b. [EURASIP Journal on Advances in Signal Processing, 2008](#), Cross-Layer Design for the Physical, MAC, and Link Layer in Wireless Systems (with Petar Popovski, Mary Ann Ingram, Christian B. Peel, Shinsuke Hara)
  - c. [Discrete Event Dynamic Systems, Dec. 2010](#), Special Issue on Valuetools 2008 (with Claudio Cicconetti)

# ΔΗΜΟΣΙΕΥΜΕΝΟ ΕΡΓΟ

## Αναφορές στο δημοσιευμένο έργο

~2400, h-index=19 (1/4/2018, Google Scholar, περιλαμβάνονται αυτοαναφορές).

## Βιβλία

1. Σ. Τουμπης, Σ. Γκιτζένης, «Λογισμός συναρτήσεων μιας μεταβλητής», ηλεκτρονικό βιβλίο, Σύνδεσμος Ελληνικών Ακαδημαϊκών Βιβλιοθηκών, <http://hdl.handle.net/11419/2177>
2. Ι. Κοντογιάννης, Σ. Τουμπής, «Στοιχεία Πιθανοτήτων», ηλεκτρονικό βιβλίο, Σύνδεσμος Ελληνικών Ακαδημαϊκών Βιβλιοθηκών, <http://hdl.handle.net/11419/2810>

## Δημοσιεύσεις σε περιοδικά

1. A. Sidera, S. Toumpis, "Wireless mobile DTN routing with the extended minimum estimated expected delay protocol," *Ad Hoc Networks*, Vol. 42, pp. 47-60, May 2016, DOI 10.1016/j.adhoc.2016.01.006
2. U. Schilcher, S. Toumpis, M. Haenggi, A. Crismani, G. Brandner, and C. Bettstetter, "Interference Functionals in Poisson Networks," *IEEE Transactions on Information Theory*, No. 1, Vol. 62, pp. 370-383, Jan. 2016, DOI: 10.1109/TIT.2015.2501799.
3. A. Crismani, S. Toumpis, U. Schilcher, G. Brandner, Christian Bettstetter, "Cooperative Relaying Under Spatially and Temporally Correlated Interference," *IEEE Transactions on Vehicular Networks*, No. 10, Vol. 64, pp. 4655-4669, Oct. 2015, DOI: 10.1109/TVT.2014.2372633.
4. A. G. Tasiopoulos, C. Tsiaras, S. Toumpis, "Optimal and achievable cost/delay tradeoffs in delay-tolerant networks," *Computer Networks*, Vol. 70, Sep. 2014, pp. 59-74, DOI 10.1016/j.comnet.2014.05.006
5. A. Sidera, S. Toumpis, "Delay tolerant firework routing: a geographic routing protocol for wireless delay tolerant networks," *EURASIP Journal on Wireless Communications and Networking*, Dec. 2013, DOI 10.1186/1687-1499-2013-23
6. R. Catanuto, S. Toumpis, G. Morabito, "On asymptotically optimal routing in large wireless networks and Geometrical Optics analogy," *Computer Networks*, Vol. 53, No. 11, July 2009, pp. 1939-1955, DOI 10.1016/j.comnet.2009.02.021
7. G. A. Gupta, S. Toumpis, J. Sayir, R. R. Mueller, "On the transport capacity of Gaussian multiple access and broadcast channels," Vol. 14, No. 5, pp. 573-590, DOI 10.1007/s11276-006-0001-x
8. S. Toumpis, "Mother nature knows best: A survey of recent results on wireless networks based on analogies with physics," *Computer Networks*, Vol. 52, No. 2, Feb. 2008, pp. 360-383, DOI 10.1016/j.comnet.2007.08.011
9. S. Toumpis, "Asymptotic Capacity Bounds for Wireless Networks with Non-Uniform Traffic Patterns," *IEEE Transactions on Wireless Communications*, No. 6, Vol. 7, pp. 2231-2242, June 2008, DOI: 10.1109/TWC.2008.061010.
10. S. Toumpis, A. J. Goldsmith, "New media access protocols for wireless ad hoc networks based on cross-layer principles," *IEEE Transactions on Wireless Communications*, No. 8, Vol. 5, pp 2228-2241, Aug. 2006, DOI: 10.1109/TWC.2006.1687739.
11. S. Toumpis, L. Tassiulas, "Optimal deployment of large wireless sensor networks," *IEEE Transactions on Information Theory*, No. 7, Vol. 52, pp. 2935-2953, July 2006, DOI: 10.1109/TIT.2006.876256
12. G. A. Gupta, S. Toumpis, "Power allocation over parallel Gaussian multiple access and broadcast channels," *IEEE Transactions on Information Theory (letter)*, No. 7, Vol. 52, pp. 2935-2953, July 2006, DOI: 10.1109/TIT.2006.876250

13. S. Toumpis and A. J. Goldsmith, "Capacity Regions for Wireless Ad Hoc Networks," *IEEE Trans. Wireless Comm.*, vol. 2, no. 4, pp. 736-748, July 2003.

## Δημοσιεύσεις σε συνέδρια

1. I. Kontoyiannis, S. Toumpis, R. Cavallari, and R. Verdone, "Asymptotics of the Packet Speed and Cost in a Mobile Wireless Network Model," in Proc. IEEE ISIT, Vail, CO, 2018.
2. R. Cavallari, S. Toumpis, and R. Verdone, "Analysis of Hybrid Geographic/Delay-Tolerant Routing Protocols for Wireless Mobile Networks," in Proc. IEEE Infocom 2018, Honolulu, HI, 2018.
3. D. Cheliotis, I. Kontoyiannis, M. Loulakis, S. Toumpis, "Exact speed and transmission cost in a simple one-dimensional wireless delay-tolerant network," 2017 IEEE International Symposium on Information Theory (ISIT), Aachen, Germany, June 2017, DOI: 10.1109/ISIT.2017.8006573.
4. R. Cavallari, R. Verdone, S. Toumpis, "Cost/speed analysis of mobile wireless DTNs under random waypoint mobility," 2016 14th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt), Tempe, AZ, June 2016, DOI: 10.1109/WIOPT.2016.7492933.
5. V. G. Douros, S. Toumpis, G. C. Polyzos, "Power Control and Bargaining for Cellular Operator Revenue Increase Under Licensed Spectrum Sharing," International Conference on Network Games, Control, and Optimization (NEWTGCOOP) 2016, Avignon, France, 2016, DOI 10.1007/978-3-319-51034-7\_10
6. V. G. Douros, S. Toumpis, G. C. Polyzos, "On the Nash Equilibria of graphical games for channel access in multihop wireless networks," 2014 IEEE Wireless Communications and Networking Conference Workshops (WCNCW), Istanbul, Turkey, April 2014, DOI: 10.1109/WCNCW.2014.6934900.
7. G. C. Polyzos, V. A. Siris, G. Xylomenos, G. F. Marias, S. Toumpis, "I-CAN: Information-centric future mobile and wireless access networks," 10th International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness, Rhodes, Greece, Aug. 2014, DOI: 10.1109/QSHINE.2014.6928676.
8. S. Gitzenis, S. Toumpis, L. Tassioulas, "Efficient file replication in large wireless networks with dynamic popularity," 10th International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness, Rhodes, Greece, Aug. 2014, DOI: 10.1109/QSHINE.2014.6928681
9. V. G. Douros, S. Toumpis, G. C. Polyzos, "Channel access competition in linear multihop device-to-device networks," 2014 International Wireless Communications and Mobile Computing Conference (IWCMC), Nicosia, Cyprus, Aug. 2014, DOI: 10.1109/IWCMC.2014.6906502
10. A. Crismani, U. Schilcher, S. Toumpis, G. Brandner, C. Bettstetter, "Packet travel times in wireless relay chains under spatially and temporally dependent interference," 2014 IEEE International Conference on Communications (ICC), Sydney, Australia, June 2014, DOI: 10.1109/ICC.2014.6883617.
11. A. Sidera, S. Toumpis, "On the delay/cost tradeoff in wireless mobile Delay-Tolerant Networks," 2014 12th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt), Hammamet, Tunisia, May 2014, DOI: 10.1109/WIOPT.2014.6850332.
12. G. Konidaris, S. Toumpis, S. Gitzenis, "Primal decomposition and online algorithms for flow optimization in wireless DTNs," 2013 IEEE Global Communications Conference (GLOBECOM), Atlanta, GA, Dec. 2013, DOI: 10.1109/GLOCOM.2013.6831052.
13. U. Schilcher, S. Toumpis, A. Crismani, G. Brandner, C. Bettstetter, "How does interference dynamics influence packet delivery in cooperative relaying?" MSWiM '13: Proceedings of the 16th ACM international conference on Modeling, analysis & simulation of wireless and mobile systems, Barcelona, Spain, Nov. 2013, DOI: 10.1145/2507924.2507926.
14. A. Sidera, S. Toumpis, "Routing using partition-wide information in wireless Delay Tolerant Networks," 2013 12th Annual Mediterranean Ad Hoc Networking Workshop (MED-HOC-NET), Ajaccio, France, June 2013, DOI: 10.1109/MedHocNet.2013.6767404.
15. A. Tasiopoulos, C. Tsiaras, S. Toumpis, "On the cost/delay tradeoff of wireless delay tolerant geographic routing," 2012 IEEE International Symposium on a World of Wireless, Mobile and

- Multimedia Networks (WoWMoM), San Francisco, CA, June 2012, DOI: 10.1109/WoWMoM.2012.6263706.
16. V. G. Douros, S. Toumpis, G. C. Polyzos, "Power control under best response dynamics for interference mitigation in a two-tier femtocell network," 2012 10th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt) (RAWNET Workshop), Paderborn, Germany, May 2012.
  17. S. Gitzenis, G. Konidaris, S. Toumpis, "Flow optimization in Delay Tolerant Networks using dual decomposition," , 2012 10th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt) (RAWNET Workshop), Paderborn, Germany, May 2012.
  18. S. Toumpis, I. Tselekounis, G. D. Stamoulis, H. Meyer, A. Hess, K. A. Hummel, "Cognitive WMNs: A distributed mechanism for leasing cellular bandwidth," 2011 IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks, Lucca, Italy, June 2011, DOI: 10.1109/WoWMoM.2011.5986486.
  19. A. Sidera and S. Toumpis, "DTFR: A geographic routing protocol for wireless Delay Tolerant Networks," 2011 The 10th IFIP Annual Mediterranean Ad Hoc Networking Workshop, Favignana Island, Italy, June 2011, DOI: 10.1109/Med-Hoc-Net.2011.5970490.
  20. V. G. Douros, G. C. Polyzos, S. Toumpis, "Negotiation-Based Distributed Power Control in Wireless Networks with Autonomous Nodes," 2011 IEEE 73rd Vehicular Technology Conference (VTC Spring), Yokohama, Japan, July 2011, DOI: 10.1109/VETECS.2011.5956443
  21. V. G. Douros, G. C. Polyzos, S. Toumpis, "A bargaining approach to power control in networks of autonomous wireless entities," MobiWac '10: Proceedings of the 8th ACM international workshop on Mobility management and wireless access, Bodrum, Turkey, Oct. 2010.
  22. S. Toumpis, S. Gitzenis, "Load Balancing in Wireless Sensor Networks using Kirchhoff's Voltage Law," IEEE INFOCOM 2009, Rio De Janeiro, Brazil, April. 2009, DOI: 10.1109/INFCOM.2009.5062084
  23. R. Catanuto, G. Morabito, S. Toumpis, "Opti{c,m}al: Optical/Optimal Routing in Massively Dense Wireless Networks," IEEE INFOCOM 2007 - 26th IEEE International Conference on Computer Communications, Barcelona, Spain, May 2007, Barcelona, Spain, DOI: 10.1109/INFCOM.2007.122
  24. S. Toumpis, "Optimal design and operation of massively dense wireless networks: or how to solve 21st century problems using 19th century mathematics," Interperf '06: Proceedings from the 2006 workshop on Interdisciplinary systems approach in performance evaluation and design of computer & communications systems, Pisa, Italy, Oct. 2006, DOI: 10.1145/1190326.1190334
  25. R. Catanuto, G. Morabito, S. Toumpis, "Optical Routing in Massively Dense Networks: Practical Issues and Dynamic Programming Interpretation," 2006 3rd International Symposium on Wireless Communication Systems, Valencia, Spain, Sept. 2006, DOI: 10.1109/ISWCS.2006.4362264
  26. S. Toumpis, G. A. Gupta, "Optimal placement of nodes in large sensor networks under a general physical layer model," 2005 Second Annual IEEE Communications Society Conference on Sensor and Ad Hoc Communications and Networks, 2005. IEEE SECON 2005, Santa Clara, CA, Sep. 2005, DOI: 10.1109/SAHCN.2005.1557082.
  27. S. Toumpis, R. Muller, J. Sayir, "On the transport capacity of a multiple access Gaussian channel," International Workshop on Wireless Ad-Hoc Networks, 2004, Oulu, Finland, May-June 2004, DOI: 10.1109/IWWAN.2004.1525569.
  28. S. Toumpis. A. J. Goldsmith, "Performance bounds for large wireless networks with mobile nodes and multicast traffic," International Workshop on Wireless Ad-Hoc Networks, 2004, Oulu, Finland, May-June 2004, DOI: 10.1109/IWWAN.2004.1525555.
  29. G. A. Gupta, S. Toumpis, J. Sayir, R. R. Muller, "Transport capacity of Gaussian multiple access and broadcast channels with a large number of nodes," Proceedings. International Symposium on Information Theory, 2005. ISIT 2005, Adelaide, Australia, Sep. 2005, DOI: 10.1109/ISIT.2005.1523560
  30. S. Toumpis, L. Tassiulas, "Packetostatics: deployment of massively dense sensor networks as an electrostatics problem," Proceedings IEEE 24th Annual Joint Conference of the IEEE Computer and Communications Societies (INFOCOM), Miami, FL, Mar. 2005, DOI: 10.1109/INFCOM.2005.1498516.

31. G. A. Gupta, S. Toumpis, J. Sayir, R. R. Muller, "On the transport capacity of Gaussian multiple access and broadcast channels," Third International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt'05), Trentino, Italy, April. 2005, DOI: 10.1109/WIOPT.2005.35.
32. S. Toumpis, "Capacity bounds for three classes of wireless networks: asymmetric, cluster, and hybrid," MobiHoc '04: Proceedings of the 5th ACM international symposium on Mobile ad hoc networking and computing, Roppongi Hills, Tokyo, Japan, May 2004, DOI: 10.1145/989459.989477
33. S. Toumpis, A. J. Goldsmith, "Large wireless networks under fading, mobility, and delay constraints," IEEE INFOCOM 2004, Hong Kong, China, Mar. 2004, DOI: 10.1109/INFCOM.2004.1354532
34. S. Toumpis, A. J. Goldsmith, J. Sayir, "Capacity results for asymmetric wireless networks," International Zurich Seminar on Communications, 2004, Zurich, Switzerland, Feb. 2004, DOI: 10.1109/IZS.2004.1287419
35. S. Toumpis, A. J. Goldsmith, "Performance, optimization, and cross-layer design of media access protocols for wireless ad hoc networks," IEEE International Conference on Communications (ICC), Anchorage, AK, May 2003.
36. S. Toumpis, A. J. Goldsmith, "Capacity regions for wireless ad hoc networks," IEEE International Conference on Communications (ICC), New York, NY, April-May 2002, DOI: 10.1109/ICC.2002.997420
37. S. Toumpis, A. J. Goldsmith, "Ad hoc network capacity," Conference Record of the Thirty-Fourth Asilomar Conference on Signals, Systems and Computers, Asilomar, CA, Oct-Nov. 2000, DOI: 10.1109/ACSSC.2000.910766.

## Κεφάλαια σε Τόμους

1. S. Sargento, R. Matos, K. A. Hummel, A. Hess, S. Toumpis, Y. Tselekounis, G. D. Stamoulis, Y. Al-Hazmi, M. Ali, H. de Meer, "Multi-Access Communications in Wireless Mesh Networks by Virtualization," in "Wireless Multi-Access Environments and Quality of Service Provisioning," IGI Global, 2012.