

Christos Nicolaides

CONTACT INFORMATION	Department of Civil and Environmental Engineering Massachusetts Institute of Technology 77 Massachusetts Ave, Room 48-216, Cambridge, MA 02139	617 6429830 chrisnic@mit.edu
RESEARCH INTERESTS	I am a physicist and engineer, with a strong interest in the physics of complex systems. I study dynamical processes in complex networks with emphasis on transport phenomena through them. More precisely, I am interested in the critical role that traffic plays in understanding transport and reaction-diffusion processes in complex systems. Possible real world applications include agents and diseases spreading, the design of optimal mitigation strategies against outbreaks and the analysis and predictability self-organized patterns formation in complex socio-technical systems.	
EDUCATION	Massachusetts Institute of Technology , Cambridge, MA <i>PhD in Civil and Environmental Engineering</i> Expected Jun. 2014 <i>SM in Civil and Environmental Engineering</i> 2011 Imperial College London , London, UK <i>MSc in Applied Mathematics (hons)</i> 2009 Aristotle University , Thessaloniki, GR <i>BSc in Physics (hons)</i> 2008	
HONORS AND AWARDS	George and Marie Vergottis MIT Fellowship, 2009-2010, 2011-2012, 2013-2014 MIT Research Assistantship, 2010-2011, 2012-2013 Graduate studies fellowship, Cyprus National Studentship Institution, 2009-2012 Makarios/Theodore and Wally Lappas Award, 2010 Panpaphian Association of America Award, 2009 Fullbright Scholarship for Master Degree, 2008 (gratefully declined) Award for the highest GPA in Undergraduate Studies (9.88/10), University of Thessaloniki, 2008 Undergraduate Scholarship from the Greek National Studentship Institution, 2004-2008	
JOURNAL PUBLICATIONS	<u>C. Nicolaides</u> , L. Cueto-Felgueroso, and R. Juanes. The Price of Anarchy in Mobility-Driven Contagion Dynamics, <i>Under Review, Journal of the Royal Society Interface</i> . <u>C. Nicolaides</u> , L. Cueto-Felgueroso, M. C. González, and R. Juanes. A metric of influential spreading during contagion dynamics through the air transportation network, <i>PLoS ONE</i> , 7 (7), e40961 (2012). *Selected Press Coverage: MIT Homepage Spotlight; MIT News; Science News; Nature Medicine; NPR; LA Times; Scientific American; Discovery Channel; The Atlantic; NY Daily News; USA Today; CNN; ABC News; Huffington Post; Time Magazine MIT press release: http://web.mit.edu/newsoffice/2012/spread-of-disease-in-airports-0723.html <u>C. Nicolaides</u> , L. Cueto-Felgueroso, and R. Juanes. Anomalous Physical Transport in Complex Networks, <i>Physical Review E</i> , 82 (5), 055101(R) (2010).	
RESEARCH EXPERIENCE	Massachusetts Institute of Technology , Cambridge, MA <i>Research Assistant, Juanes Research Group</i> September 2009 – present Dynamical processes in complex networks; transport processes in mobility networks; transportation networks; cities; human mobility patterns; disease spreading; economic networks; big data processing and visualizations; social networks dynamics; network optimization Imperial College London , London, UK <i>Research Assistant</i> August 2008 – July 2009 Fluid Mechanics; fluid dynamics; film flows under magnetic and electric field	

TEACHING EXPERIENCE	<p>Massachusetts Institute of Technology, Cambridge, MA</p> <p><i>Teaching Assistant</i> Spring 2013</p> <p>Lectured recitations, conducted office hours and graded weekly assignments for over 20 graduate students in the course, Computation Methods for Flow in Porous Media. Instructors: Ruben Juanes, Luis Cueto-Felgueroso.</p> <p><i>Teaching Assistant</i> Fall 2011</p> <p>Lectured recitations, conducted office hours and graded weekly assignments for over 10 graduate students in the course, Computer Modeling: From Human Mobility to Transportation Networks. Instructor: Marta C. González</p>
CONFERENCE CONTRIBUTIONS	<p><u>C. Nicolaidis</u>, L. Cueto-Felgueroso, and R. Juanes. Activator-inhibitor systems on heterogeneous ecological networks <i>Poster Presentation</i>, AGU Fall Meeting, December 2-7, 2012, San Francisco CA, USA</p> <p><u>C. Nicolaidis</u>, L. Cueto-Felgueroso, and R. Juanes. Coupled contagion-policy spreading and the price of anarchy in networks <i>Oral Presentation</i>, NetSci2012, June 3-7, 2012, Chicago IL, USA</p> <p><u>C. Nicolaidis</u>, P. K. Kang, L. Cueto-Felgueroso, M. Dentz, and R. Juanes. Scaling of reactive transport in fracture networks: a fermionic network approach <i>Oral Presentation</i>, CMWR2012, June 2012, Urbana IL, USA</p> <p><u>C. Nicolaidis</u>, P. K. Kang, L. Cueto-Felgueroso, M. Dentz, and R. Juanes. Disease Spreading in Lattice Networks With Traffic Heterogeneity. <i>Poster Presentation</i>, AGU Fall Meeting, December 4-7, 2011, San Francisco CA, USA</p> <p><u>C. Nicolaidis</u>, L. Cueto-Felgueroso, M. C. González, and R. Juanes. Spreading and Contact Dynamics in Metapopulation Networks: A Stochastic Agent Model of Disease Spreading in the Air Transportation Network. <i>Oral Presentation</i>, NetSci2011, June 4-8, 2011, Budapest, HU</p> <p><u>C. Nicolaidis</u>, L. Cueto-Felgueroso, R. Juanes. Anomalous Transport in Complex Networks Under A Driving Force. <i>Poster Presentation</i>, AGU Fall Meeting, December 14-17, 2010, San Francisco CA, USA</p> <p><u>C. Nicolaidis</u>, L. Cueto-Felgueroso, R. Juanes. Anomalous Physical Transport in Complex Networks. <i>Poster Presentation</i>, Gordon Conference on Flow and Transport in Permeable Media, July 14-17, 2010, ME, USA</p> <p><u>C. Nicolaidis</u>, L. Cueto-Felgueroso, R. Juanes. Anomalous Physical Transport in Complex Networks. <i>Oral Presentation</i>, International Conference on Network Science (NetSci2010), May 10-14, 2010, Boston MA, USA</p>
MEMBERSHIPS	American Physical Society, American Geophysical Society, MIT Energy Club
SKILLS	MATLAB; Perl; big data visualizations using Processing and Cytoscape, Adobe Illustrator and Photoshop, L ^A T _E X, Java.
OTHER INTERESTS	Surfing, Tennis, Fishing, Food