References for IMS Proposal Developing a Measurement Basis for Predicting Catastrophic Behavior in Complex Information Systems

- [1] M. Scheffer et al., "Early warning signals for critical transitions", *Nature*, v. 461, no. 3, Sep. 3, 2009, pp. 53-59.
- [2] J. Lim and B. Epureanu, "Forecasting a class of bifurcations: Theory and experiment", *PHYSICAL REVIEW E* 83, 016203, 2011.
- [3] C. Kuehn, "A mathematical framework for critical transitions: normal forms, variance and applications" Cornell University Library, arXiv eprint, 1101.2908. arXiv:1101.2908v1 [math.DS]
- [4] R. Washington-Allen, D. Briske, H. Shugart, and L. Salo, "Introduction to special feature on catastrophic thresholds, perspectives, definitions, and application", *Ecology and Society*, 15(3): 38, 2008.
- [5] J. Wilson, "The cost of network downtime 2003", Infonetics Research.
- [6] J. Wilson, "The cost of network downtime 2005", Infonetics Research.
- [7] J. Duffy, "Cisco routers caused major outage in Japan", Network World, May 16, 2007.
- [8] J. Cowie, "China's 18-Minute Mystery" Renesys Blog, November 18, 2010. http://www.renesys.com/blog/2010/11/chinas-18-minute-mystery.shtml
- [9] M. Brown, "Pakistan hijacks YouTube", Renesys Blog, February, 24, 2008.
- [10] E. Coffman, Z. Ge, V. Mishra and D. Towsley, "Network Resilience: Exploring Cascading Failures within BGP", *Proceedings of the 40th Annual Allerton Conference on Communications*, 2002.
- [11] J. Yuan and K. Mills, "Monitoring the Macroscopic Effect of DDoS Flooding Attacks", *IEEETransactions on Dependable and Secure Computing*, 2/4, October-December 2005, pp. 324-335.
- [12] M. Takayasu, H. Takayasu and K. Fukuda, "Dynamic phase transition observed in Internet traffic flow", *Physica A* 277 (2000) 248-255.
- [13] P. Echenique, J. Gomez-Gardenes and Y. Moreno, "Dynamics of jamming transitions in complex networks", *Europhys. Lett.* 71 (2005) 325.
- [14] D. De Martino, L. Dall'Asta, G. Bianconi and M. Marsili, "Congestion phenomena on complex networks" *Physical Review E* 79 015101 (R) (2009).
- [15] H. Liao, J. Apt and S. Talukdar, "Phase Transition in the Probability of Cascading Failures", Carnegie University Technical Report, December 2004.
- [16] B. Carreras, V. Lynch, I. Dobson and D. Newman, "Critical points and transitions in a electric power transmission model for cascading failure blackouts", *Chaos*, 12(4), (2005) 985-994.
- [17] P, Hines, E. Cotilla-Sanchez, and S. Blumsack, "Topological Models and Critical Slowing Down: Two Approaches to Power System Blackout Risk Analysis," Proceedings of the 44th Hawaii Conference on System Sciences, pp.1-10. Kauai, Hawaii, January 4-7, 2011.
- [18] ASIA/PAC AMHS/ATN Network Management Operational Procedure Guidelines, International Aviation Organization, September, 2009.
- [19] D. Peng, "About the April 13th Service Outage", Ooma's Blog, April 2009.
- [20] J. Tredice et al., "Critical slowing down at a bifurcation", *American Journal of Physics* 72, 799-809, 2004.

- [21] G. Matsumoto and T. Kunisawa, "Critical slowing-down near the transition region from the resting to time-ordered states in squid giant axons", *Journal of the Physical Society of Japan*, 44, 1047-1048, 1978.
- [22] J. Petit et al. "Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica", *Nature*, 399, 429-436, 1999.
- [23] D. Luthi et al., High-resolution carbon dioxide concentration record 650,000-800,000 years before present", *Nature* 453, 379-382, 2008.
- [24] M. Scheffer and S. Carpenter, "Catastrophic regime shifts in ecosystems: linking theory to observation", *Trends in Ecology and Evolution*, 18, 648-656, 2003.
- [25] M. Rietkerk et al., "Self-organized patchiness and catastrophic shifts in ecosystems", *Science*, 305, 1926-1929, 2004.
- [26] M. Scheffer and E. van Nes, "Shallow lakes theory revisited: various alternative regimes driven by climate, nutrients, depth and lake size", *Hydrobiologia*, 584, 455-466, 2007.
- [27] J. Venegas et al., "Self-organized patchiness in asthma as a prelude to catastrophic shifts", *Nature*, 434, 777-782, 2005.
- [28] F. Mormann et al. "Seizure prediction: the long and winding road", *Brain*, 130, 314-333, 2007.
- [29] D. Bates, "The crash of 87 was it expected? The evidence from options markets", *Journal of Finance*, 46, 1009-1044, 1991.
- [30] R. Whaley, "Derivatives on market volatility: hedging tools long overdue", *Journal of Derivatives*, 1, 71-84, 1993.
- [31] J. Cuesta et al. "Phase transitions in two-dimensional traffic-flow models", *Physical Review E*, 48, 4175-4178, 1993.
- [32] D. Helbing et al., "Micro- and macro-simulation of freeway traffic", *Mathematical and Computer Modeling*, 35, 517-547, 2002.
- [33] Y. Yokoya, "Dynamics of traffic flow with real-time traffic information", *Physical Review E*, 69, 11 pages, 2004.
- [34] B. Carreras et al., "Critical points and transitions in an electric power transmission model for cascading failure blackouts", *Chaos*, 12:4, 10 pages, 2002.
- [35] H. Liao, J. Apt and S. Talukdar, "Phase Transitions in the Probability of Cascading Failures", Carnegie Mellon Electricity Industry Center, 2006.
- [36] Y. Moreno, R. Pastor-Satorras and A. Vespignani, "Epidemic outbreaks in complex heterogeneous networks", *European Physical Journal B*, 26:4, 521-529, 2004.
- [37] T. Zhou, Z-Q. Fu, B-H Wang, "Epidemic dynamics on complex networks", *Progress in Natural Science*, 16:5, 452-457, 2006.
- [38] B. White, J. Lepreau, L. Stoller, R. Ricci, S. Guruprasad, M. Newbold, M. Hibler, C. Barb, and A., Joglekar, , "An Integrated Experimental Environment for Distributed Systems and Networks," *Proceedings of the* 5th Symposium on Operating Systems Design and Implementation, 2002, 255-270.
- [39] H. Wang, D. Zhang and K. Shin, "Change-point monitoring for the detection of DoS attacks", *IEEE Transactions on Dependable and Secure Computing*, 1:4, 193-208, 2004.
- [40] J. Yuan and K. Mills, "Monitoring the Macroscopic Effect of DDoS Flooding Attacks", *IEEE Transactions on Dependable and Secure Computing*, 2:4, 324-335, 2005.
- [41] K. Mills, E. Schwartz and J. Yuan, "How to model a TCP/IP network using only 20 parameters", *Proceedings of the 41st Winter Simulation Conference*, 2010, IEEE, 849-860.

- [42] K. Mills, J. Filliben and C. Dabrowski, "Sensitivity Analysis of Koala: an Infrastructure Cloud Simulator", submitted to the 4th International Conference on Cloud Computing, IEEE, 2011.
- [43] K. Mills and C. Dabrowski, "Can Economics-based Resource Allocation Prove Effective in a Computation Marketplace?", *Journal of Grid Computing*, 6/3, September 2008, 291-311.
- [44] The Internet 2 Observatory Data Collections, http://www.internet2.edu/observatory/archive/data-collections.html
- [45] Protected Repository for the Defense of Infrastructure against Cyber Threats, <u>https://www.predict.org/Default.aspx?tabid=40</u>
- [46] The Cooperative Association for Internet Data Analysis (CAIDA) Data Sets, http://www.caida.org/data/overview/
- [47] RIPE Network Coordination Centre Data Sets, http://labs.ripe.net/datarepository/data-sets
- [48] K. Heidemann and C. Papdopoulos, "Uses and Challenges for Network Datasets", *Proceedings of Conference for Homeland Security*, 2009, 73-82.
- [49] University of Illinois Urbana-Champaign Repository of Availability Traces http://www.cs.uiuc.edu/homes/pbg/availability/
- [50] Network Economics Group Data Sets, http://netecon_group.tmit.bme.hu/source-codes
- [51] University of California Riverside Archive, http://networks.cs.ucr.edu/ucrchive/measurement.htm
- [52] Google M-Lab Data Sets, http://www.measurementlab.net/data
- [53] Technische Universiteit Delft, Peer-to-Peer Trace Archive, http://p2pta.ewi.tudelft.nl/pmwiki/?n=Main.Home
- [54] Emulab total network testbed <u>http://www.emulab.net/</u>
- [55] Other Emulabs https://users.emulab.net/trac/emulab/wiki/OtherEmulabs
- [56] Amazon Elastic Compute Cloud (EC2) http://aws.amazon.com/ec2/
- [57] S. Dynes, E. Andrijcic, and M. E. Johnson, "Costs to the U.S. Economy of Information Infrastructure Failures: Estimates from Field Studies and Economic Data", *Proceedings of the* 5th Workshop on the Economics of Information Security, Cambridge University.