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BIBLIOGRAPHY

- ABRA 70 Abramson, N. "THE ALOHA SYSTEM--Another Alternative for Computer Communications," Fall Joint Computer Conference, AFIPS Conference Proceedings, 1970, Vol. 37, pp. 281-285.
- ABRA 72 Abramson, N. "ARPANET Satellite System," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 7 (NIC 11289), May 1972.
- ABRA 73 Abramson, N. "Packet Switching with Satellites," National Computer Conference, New York, June 4-8, 1973, AFIPS Conference Proceedings, 1973, Vol. 42, pp. 695-702.
- AGNE 73 Agnew, C.E. "The Dynamic Control of Congestion-Prone Systems through Pricing," Center for Interdisciplinary Research, Stanford University, Stanford, California, Report No. 6, November 1973.
- ASHT 66 Ashton, W.D. The Theory of Road Traffic Flow, Methuen, London, 1966.
- BARA 64 Baran, P. "On Distributed Communications: XI. Summary Overview," Rand Corporation, Santa Monica, California, Memorandum RM-3767-PR, August 1964.
- BAYL 73 Bayless, J.W., S.J. Campanella and A. J. Goldberg. "Voice Signals: Bit-by-Bit," IEEE Spectrum, Vol. 10, No. 10, pp. 28-36, October 1973.
- BEVE 70 Beveridge, G.S. and R.S. Schechter. Optimization: Theory and Practice, McGraw-Hill, New York, 1970.
- BIND 72 Binder, R. "Another ALOHA Satellite Protocol," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 32 (NIC 13147), December 1972.
- BUTT 74 Butterfield, S., R. Rettberg and D. Walden. "The Satellite IMP for the ARPA Network," Seventh Hawaii International Conference on System Sciences, University of Hawaii, Honolulu, January 8-10, 1974, Proceedings of the Special Subconference on Computer Nets, 1974.
- CACC 71 Cacciamani, E. "The SPADE System as Applied to Data Communications and Small Earth Station Operation," COMSAT Technical Review, Vol. 1, No. 1, pp. 171-182, 1971.
- CACC 74 Cacciamani, E. "Data Services--American Satellite Corporation," Seventh Hawaii International Conference on System Sciences, University of Hawaii, Honolulu, January 8-10, 1974, Proceedings of the Special Subconference on Computer Nets, 1974.

- CARR 70 Carr, S., S. Crocker and V. Cerf. "HOST-HOST Communication Protocol in the ARPA Network," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1970, Vol. 36, pp. 589-597.
- CHU 69 Chu, W.W. "A Study of Asynchronous Time Division Multiplexing for Time-Sharing Computer Systems," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1969, Vol. 35, pp. 669-678.
- CHUN 67 Chung, K.L. Markov Chains with Stationary Transition Probabilities, Springer-Verlag, New York, 1967.
- COHE 69 Cohen, J.W. The Single Server Queue, Wiley, New York, 1969.
- CRAI 64 Craig, E.J. Laplace and Fourier Transforms for Electrical Engineers, Holt, Rinehart and Winston, New York, 1964.
- CROC 72 Crocker, S., J. Heafner, R. Metcalfe and J. Postel. "Function-Oriented Protocols for the ARPA Computer Network," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1972, Vol. 40, pp. 271-279.
- CROW 73 Crowther, W., R. Rettberg, D. Walden, S. Ornstein, and F. Heart. "A System for Broadcast Communication: Reservation-ALOHA," Proceedings of the Sixth Hawaii International Conference on System Sciences, University of Hawaii, Honolulu, January 1973.
- DAVI 68 Davies, D.W. "The Principles of a Data Communication Network for Computers and Remote Peripherals," Proceedings IFIP Congress, Edinburgh, Scotland, 1968, pp. D11-D15.
- DAVI 71 Davies, D.W. "The Control of Congestion in Packet Switching Networks," Proceedings of the Second ACM/IEEE Symposium on Problems in the Optimization of Data Communications Systems, 1971, pp. 46-49.
- DUNN 74 Dunn, D. and M. Eric. "The Economics of Packet Switching," Seventh Hawaii International Conference on System Sciences, University of Hawaii, Honolulu, January 8-10, 1974, Proceedings of the Special Subconference on Computer Nets, 1974.
- FELL 68 Feller, W. An Introduction to Probability Theory and Its Applications, 3rd ed., Vol. I, Wiley, New York, 1968.
- FRAN 70 Frank, H., I. Frisch and W. Chou. "Topological Considerations in the Design of the ARPA Computer Network," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1970, Vol. 36, pp. 581-587.

- FRAN 72A Frank, H., R. Kahn and L. Kleinrock. "Computer Communication Network Design--Experience with Theory and Practice," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1972, Vol. 40, pp. 255-270.
- FRAN 72B Frank, H. and W. Chou. "Topological Optimization of Computer Networks," Proceedings of the IEEE, Vol. 60, No. 11, pp. 1385-1396, November 1972.
- FRAN 73 Frank, H., M. Gerla and W. Chou. "Issues in the Design of Large Distributed Computer Communication Networks," Proceedings of the National Telecommunication Conference, Atlanta, November 26-28, 1973.
- FUCH 70 Fuchs, E. and P.E. Jackson. "Estimates of Distributions of Random Variables for Certain Computer Communications Traffic Models," Communications of the ACM, Vol. 13, No. 12, pp. 752-757, December 1970.
- FULT 72 Fultz, G.L. "Adaptive Routing Techniques for Message Switching Computer-Communication Networks," School of Engineering and Applied Science, University of California, Los Angeles, UCLA-ENG-7252, July 1972.
- GAAR 72 Gaarder, N.T. "ARPANET Satellite System," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 3 (NIC 11285), April 1972.
- GABB 68 Gabbard, O. "Design of a Satellite Time-Division Multiple-Access Burst Synchronizer," IEEE Transactions on Communications Technology, Vol. COM-16, No. 4, pp. 589-596, August 1968.
- GERL 73 Gerla, M., W. Chou and H. Frank. "Computational Considerations and Routing Problems for Large Computer Communication Networks," Proceedings of the National Telecommunication Conference, Atlanta, November 26-28, 1973.
- GITM 74 Gitman, I., R. Van Slyke and H. Frank. "On Splitting Random Accessed Broadcast Communication Channels," Seventh Hawaii International Conference on System Sciences, University of Hawaii, Honolulu, January 8-10, 1974, Proceedings of the Special Subconference on Computer Nets, 1974.
- GRAY 74 Gray, E.M. "ANIK," Communications Society, Vol. 12, No. 1, pp. 3-5, January 1974.
- HAYE 71 Hayes, J. and D. Sherman. "Traffic Analysis of a Ring Switched Data Transmission System," Bell System Technical Journal, Vol. 50, No. 9, pp. 2947-2978, November 1971.

- HAYE 72 Hayes, J. and D. Sherman. "A Study of Data Multiplexing Techniques and Delay Performance," The Bell System Technical Journal, Vol. 51, No. 9, pp. 1983-2011, November 1972.
- HEAR 70 Heart, F., R. Kahn, S. Ornstein, W. Crowther and D. Walden. "The Interface Message Processor for the ARPA Computer Network," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1970, Vol. 36, pp. 551-567.
- HOWA 60 Howard, R. Dynamic Programming and Markov Processes, M.I.T. Press, Cambridge, Mass., 1960.
- HOWA 71 Howard, R. Dynamic Probabilistic Systems, Vol. 1: Markov Models and Vol. 2: Semi-Markov and Decision Processes, Wiley, New York, 1971.
- JACK 69 Jackson, P.E. and C.D. Stubbs. "A Study of Multiaccess Computer Communications," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1969, Vol. 34, pp. 491-504.
- KAHN 71 Kahn, R.E. and W.R. Crowther. "Flow Control in a Resource-Sharing Computer Network," Proceedings of the Second ACM/IEEE Symposium on Problems in the Optimization of Data Communications Systems, 1971, pp. 108-116.
- KLEI 64 Kleinrock, L. Communication Nets: Stochastic Message Flow and Delay, McGraw Hill, New York, 1964, out of print (Reprinted by Dover Publications, New York, 1972).
- KLEI 70 Kleinrock, L. "Analytic and Simulation Methods in Computer Network Design," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1970, Vol. 36, pp. 569-579.
- KLEI 72A Kleinrock, L. and S.S. Lam. "Analytic Results for the ARPANET Satellite System Model Including the Effects of the Retransmission Delay Distribution," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 12 (NIC 11294), August 1972.
- KLEI 72B Kleinrock, L. and S.S. Lam. "Approximations in the Infinite Population Model of the ARPANET Satellite System," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 17 (NIC 11862), October 1972.
- KLEI 72C Kleinrock, L. and S.S. Lam. "Correction for ASS Note 12," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 25 (NIC 12734), November 1972.

- KLEI 72D Kleinrock, L. and S.S. Lam. "Analytic Results with the Addition of One Large User," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 27 (NIC 12736), October 1972.
- KLEI 73A Kleinrock, L. and S.S. Lam. "Packet-Switching in a Slotted Satellite Channel," National Computer Conference, New York, June 4-8, 1973, AFIPS Conference Proceedings, 1973, Vol. 42, pp. 703-710.
- KLEI 73B Kleinrock, L. and S.S. Lam. "Dynamics of the ALOHA Channel," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 50 (NIC 18455), August 1973.
- KLEI 74A Kleinrock, L. and S.S. Lam. "On Stability of Packet Switching in a Random Multi-Access Broadcast Channel," Seventh Hawaii International Conference on System Sciences, University of Hawaii, Honolulu, January 8-10, 1974, Proceedings of the Special Subconference on Computer Nets, 1974.
- KLEI 74B Kleinrock, L., and W.E. Naylor. "On Measured Behavior of the ARPA Network," to be presented at the National Computer Conference, Chicago, May 1974.
- KLEI 74C Kleinrock, L. and F.A. Tobagi. "Carrier-Sense Multiple Access for Packet Switched Radio Channels," to be presented at the International Conference on Communications, Minneapolis, Minn., June 1974.
- KLEI 74D Kleinrock, L., Queueing Systems, Vol. I, Theory, Vol. II, Computer Applications, to be published by Wiley Interscience, New York, 1974.
- KUO 73 Kuo, F.F., and N. Abramson. "Some Advances in Radio Communications for Computers," Digest of papers, Seventh Annual IEEE Computer Society International Conference, San Francisco, California, February 1973, pp. 57-60.
- LAM 73 Lam, S.S. "Some Satellite Simulation Results," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 48 (NIC 17655), July 1973.
- LITT 61 Little, J. "A Proof of the Queuing Formula $L = \lambda W$," Operations Research, Vol. 9, No. 2, pp. 383-387, March-April 1961.
- LU 73 Lu, S. "Dynamic Analysis of Slotted ALOHA with Blocking," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 36 (NIC 14790), March 1973.

- MART 71 Martin, J. Future Developments in Telecommunications, Prentice-Hall, Englewood Cliffs, N.J., 1971.
- MART 72 Martin, J. Systems Analysis for Data Transmission, Prentice-Hall, Englewood Cliffs, N.J., 1972.
- METC 73A Metcalfe, R.M. "Steady-State Analysis of a Slotted and Controlled ALOHA System with Blocking," Proceedings of the Sixth Hawaii International Conference on System Sciences, University of Hawaii, Honolulu, January 1973.
- METC 73B Metcalfe, R.M. "Packet Communication," Project MAC, Massachusetts Institute of Technology, Cambridge, Mass., Report MAC TR-114, July 1973.
- NAC 73 Network Analysis Corporation. "The Practical Impact of Recent Computer Advances on the Analysis and Design of Large Scale Networks," First Semiannual Technical Report, Glen Cove, New York, May 1973.
- NEWE 68 Newell, G.F. "Queues with Time-Dependent Arrival Rates I--the Transition through Saturation," Journal of Applied Probability, Vol. 5, No. 2, pp. 436-451, August 1968.
- ORNS 72 Ornstein, S., F. Heart, W. Crowther, H. Rising, S. Russell and A. Michel. "The Terminal IMP for the ARPA Computer Network," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1972, Vol. 40, pp. 243-254.
- PARZ 62 Parzen, E. Stochastic Processes, Holden-Day, San Francisco, 1962.
- PIER 71 Pierce, J.R. "Network for Block Switching of Data," IEEE Convention Record, New York, March 1971.
- PUEN 71 Puente, J. and A. Werth. "Demand Assignment Service for the INTELSAT Global Network," IEEE Spectrum, Vol. 8, No. 1, pp. 56-69, January 1971.
- RETT 72 Rettberg, R. "A Brief Simulation of the Dynamics of an ALOHA System with Slots," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 11 (NIC 11293), July 1972.
- RETT 73A Rettberg, R. "Slotting," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 42 (NIC 16085), May 1973.
- RETT 73B Rettberg, R. "Preliminary Simulation Results for Reservation ALOHA," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 43 (NIC 16086), May 1973.

- RETT 73C Rettberg, R. "Geometric Retransmission Randomization," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 51 (NIC 18744), September 1973.
- ROBE 70 Roberts, L.G. and B.D. Wessler. "Computer Network Development to Achieve Resource Sharing," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1970, Vol. 36, pp. 543-549.
- ROBE 72A Roberts, L.G. "Extensions of Packet Communication Technology to a Hand Held Personal Terminal," Spring Joint Computer Conference, AFIPS Conference Proceedings, 1972, Vol. 40, pp. 295-298.
- ROBE 72B Roberts, L.G. "ALOHA Packet System With and Without Slots and Capture," ARPA Network Information Center, Stanford Research Institute, Menlo Park, California, ASS Note 8 (NIC 11290), June 1972.
- ROBE 73 Roberts, L.G. "Dynamic Allocation of Satellite Capacity through Packet Reservation," National Computer Conference, New York, June 4-8, 1973, AFIPS Conference Proceedings, 1973, Vol. 42, pp. 711-716.
- ROBE 74 Roberts, L.G. "Data by the Packet," IEEE Spectrum, Vol. 11, No. 2, pp. 46-51, February 1974.
- ROSS 70 Ross, S.M. Applied Probability Models with Optimization Applications, Holden-Day, San Francisco, 1970.
- RUDI 66 Rudin, W. Real and Complex Analysis, McGraw-Hill, New York, 1966.
- SCHW 65 Schwarz, R.J. and B. Friedland. Linear Systems, McGraw-Hill, New York, 1965.
- TELE 73 Telenet Communications Corporation. "Before the Federal Communications Commission, Application for Authority to Establish and Operate a Packet-Switched Data Communications Network in the Continental United States," Washington, D.C., October 1973.
- WRIG 73 Wright, P. "Facing a Booming Demand for Networks," Datamation, Vol. 19, No. 11, pp. 138-139, November 1973.