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ADVANCED COMMUNICATIONS TECHNIQUES  
L.D. DAVISSON  
M.E. VAN VALKENBURG

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Many significant results have been obtained by research under this grant. These are presented in the following lectures and papers completed over the last three years.

Lectures Presented Under the Grant

1. "An Adaptive Predictor With Self-Adjusting Memory," Adaptive Telemetry Conference, Goddard Spaceflight Center, February, 1966.
2. "The Adaptive Prediction of Time Series," National Electronics Conference, October, 1966.
3. "The Effect of Channel Errors on Data Compression," IEEE Wescon, August, 1967.
4. "Nonlinear Prediction of NonGaussian Time Series," International Symposium on Information Theory, San Remo, Italy, September, 1967.
5. "The Theoretical Analysis of Data Compression Systems," Polytechnic Institute of Brooklyn, November, 1967.
6. "The Theoretical Analysis of Data Compression Systems," University of California, San Diego, December, 1967.
7. "On the Theoretical Analysis of Data Compression Techniques," Hawaii Int'l. Conference on System Sciences, January, 1968.
8. "Nonparametric Detection with Dependent Observations," Hawaii Int'l. Conference on System Sciences, January, 1968.
9. "The Analysis of Data Compression Systems," U. S. Army Electronics Command Technical Symposium on Aviation-Electronics, March, 1968.
10. "Information Rates for Data Compression," IEEE Wescon, August, 1968.
11. "Analysis of a Decision Directed Receiver," University of Rhode Island, October, 1968.
12. "Information Rates for Data Compression," Bell Telephone Labs. Holmdel, N. J., July 1968.
13. "Analysis of a Decision Directed Receiver with Unknown Priors," IEEE International Symposium on Information Theory, January, 1969.

14. "Nonparametric Sequential Testing Using Mixed Statistics,"  
IEEE International Symposium on Information Theory, January, 1969.
15. "An application of Data Compression Concepts," Purdue Centennial  
Year Symposium on Information Processing, April, 1969.
16. "Theoretical Considerations in Data Compression," M.I.T.  
Symposium on Picture Bandwidth Compression, April, 1969.

Papers Under the Grant

1. "The Adaptive Prediction of Time Series," Proceedings of the National Electronics Conference, 1966.
2. "An Approximate Theory of Prediction for Data Compression," IEEE Transactions on Information Theory, April, 1967.
3. "The Effect of Channel Errors on Data Compression," Wescon 67 Technical Papers.
4. "The Asymptotic Relative Efficiency of Mixed Statistical Tests," IEEE Transactions on Information Theory, April, 1967.
5. "Data Compression Using Straight Line Interpolation," IEEE Transactions on Information Theory, May, 1968.
6. "Nonlinear Prediction of NonGaussian Time Series," Abstracts of Papers, Int'l. Symposium on Information Theory, September, 1967.
7. "The Theoretical Analysis of Data Compression Systems," Proceedings of the IEEE (invited paper), February, 1968.
8. "Nonparametric Detection with Dependent Samples," Proceedings of the Hawaii International Conference on System Sciences, 1968.
9. "On the Theoretical Analysis of Data Compression Techniques," Proceedings of the Hawaii International Conference on System Sciences, 1968.
10. "The Effects of Dependence on Nonparametric Detection," IEEE Transactions on Information Theory (to be published).
11. "The Analysis of Data Compression Systems," Proceedings of the Technical Symposium on Aviation Electronics, Fort Monmouth, N. J. , March 1968.
12. "Information Rates for Data Compression," Wescon 68 Technical Papers, August, 1968.
13. "Bounds on Entropy with an  $l_1$  Norm," Proceedings of the Hawaii International Conference on System Sciences, January 1969.
14. "An Application of Data Compression Concepts," Proceedings of the Purdue Centennial Year Symposium on Information Proceedings, April, 1969.
15. "On the Efficacy of Mixed, Locally Optimum One-and-Two Sample Rank Tests," IEEE Trans. on Information Theory, September, 1968.

16. "Theoretical Considerations in Data Compression," M.I.T. Symposium on Picture Bandwidth Compression, M.I.T. Press, 1969.
17. Errors in Transmission of Compressed Data, Princeton University Ph.D. dissertation, June 1968.