

EDITOR'S PROFILE of this issue

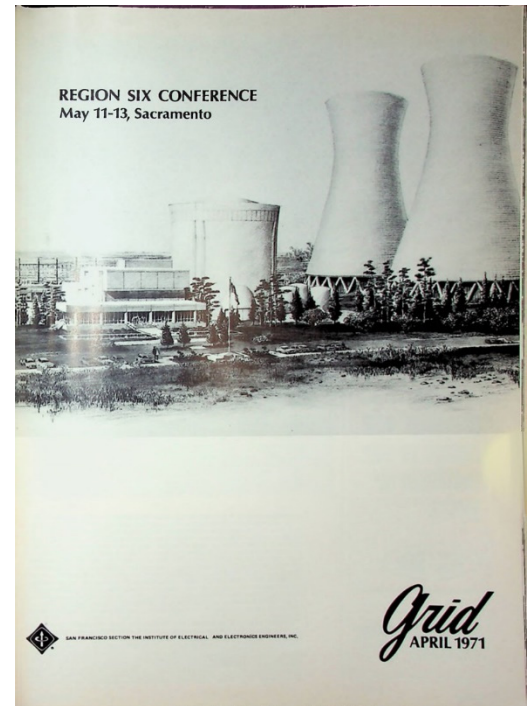
from a historical perspective ...

with Paul Wesling, SF Bay Area Council GRID editor (2004-2014)

April, 1971:

Cover: a field trip is planned to the Rancho Seco nuclear power plant.

Information on pages 4-5.



Archive of available SF Bay Area GRID Magazines is at this location:

https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History

At time of scanning, the bound volumes are held by Paul Wesling.

April, 2025

Contact p.wesling@ieee.org

REGION SIX CONFERENCE
May 11-13, Sacramento



SAN FRANCISCO SECTION THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Grid
APRIL 1971

APRIL 1971

Published monthly except July and August
by San Francisco Section
Institute of Electrical and Electronics Engineers
701 Welch Rd., Palo Alto, Ca. 94304
Phone: (415) 327-6622

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Second Class postage paid at Palo Alto, Ca.
and at additional mailing offices

Subscriptions: \$4.00 (members); \$6.00 (others)
overseas: \$7.00 per annum

THE COVER

One of the special features of the Region Six Conference will be a field trip to the Rancho Seco Nuclear Power Plant (cover picture). The center spread on pages 4 & 5 are devoted to the technical sessions, social and special events of the conference, whose theme this year is, "Engineering For the Conservation of Mankind."

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MEETING

AEROSPACE & ELECTRONIC SYSTEMS APR. 15

Story on
page 3

SATELLITE COMMUNICATIONS EARTH STATION FOR KOREA. Harry K. Berland, Mgr., Systems Engineering, Ground Terminal, Philco-Ford WDL, Palo Alto.

APR. 15, Thursday, 8:00 PM, Philco-Ford Auditorium, Bldg. 56, 3825 Fabian Way, Palo Alto. Dinner: 6:15 PM, Rick's Hyatt House, 4219 El Camino, Palo Alto. Reservations for dinner: Pat Hoppe, 326-4350, ext. 6143 by Apr. 12th.

ANTENNAS & PROPAGATION APR. 21

Story on
page 3

A NEW LIBERATION IN LOG-PERIODIC ARRAY DESIGN. Prof. K. K. Mei, UC, Berkeley.

APR. 21, Wednesday, 8:00 PM, Room 277, Cory Hall, UC, Berkeley. Cocktails: 5:30, dinner: 6:15 PM, Spenger's Fish Grotto, 1919 - 4th St., Berkeley. (Take University Ave. off-ramp off East Shore Freeway.) No reservations required.

AUDIO & ELECTROACOUSTICS APR. 22

Story on
page 6

THE SIMULATION OF MOVING SOUND SOURCES. Dr. John M. Chowning, Prof. of Music, Stanford University.

APR. 22, Thursday, 7:30 PM, Cafeteria, GRT Corp., Headquarters Bldg., 1287 No. Lawrence Expressway, Sunnyvale. No dinner. For information call Jim Wood at (408) 734-2910.

AUTOMATIC CONTROL APR. 20

Story on
page 6

A SURVEY OF NEW DEVELOPMENTS IN DYNAMIC PROGRAMMING COMPUTATIONAL PROCEDURES. Dr. Robert E. Larson, V.P., Systems Control, Inc., Palo Alto.

APR. 20, Tuesday, 8:00 PM, Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto. Dinner: 6:15 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. No reservations.

COMPUTER APR. 27

Story on
page 6

THE COMPUTER IN THE TREATMENT OF AUTISTIC CHILDREN. Kenneth Colby, M.D., Computer Science Dept., Stanford. "WIVES NIGHT."

APR. 27, Tuesday, 8:00 PM, Skilling Auditorium, Stanford. Dinner: 6:15 PM, Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto. Reservations: Judie DeMasse, 321-3300, ext. 270 by Apr. 26th.

EAST BAY SUBSECTION APR. 26

Story on
page 6

CONFLICTS IN THE ALLOCATION OF USES OF THE CALIFORNIA COAST LINE. Harold Rasel, Exec. Secty., Interagency Council for Ocean Resources. Ladies and guests are welcome.

APR. 26, Monday, 7:30 PM, PG&E Service Center, 4801 Colport St., Oakland. No dinner.

ELECTROMAGNETIC COMPATIBILITY APR. 19

Story on
page 6

INTERFERENCE LEVEL PREDICTION TECHNIQUES. Robert B. Cowdell, EMC Supervisor, ATT Gilman, Van Nuys, Cal.

APR. 19, Monday, 8:00 PM, Hewlett-Packard Auditorium, 5301 Stevens Creek Blvd., Santa Clara. Dinner: 6:30 PM, Customhouse Restaurant, 20060 Stevens Creek Blvd., Cupertino. Reservations: Ray Magnuson, (408) 246-4300, ext. 2241 by Apr. 19th.

ENGINEERING MANAGEMENT/AUDIO & ELECTROACOUSTICS APR. 14

Story on
page 6

JOINT PANEL MEETING: "IEEE IN THE '70's - NON-TECHNICAL DIRECTION, RESPONSIBILITIES." Panel members from AMA, ABA, IEEE, LSEA and NSPE. Moderator: P.S. Steinberg.

APR. 14, Wednesday, 7:30 PM, Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto. No dinner.

ENGINEERING IN MEDICINE & BIOLOGY APR. 13

Story on
page 7

SERIES LECTURE BY NATIONAL EMB SPEAKER. APPLICATIONS OF ENGINEERING PRINCIPLES & METHODS TO ELECTROCARDIOGRAPHY. Daniel A. Brody, M.D., Univ. of Tennessee Medical Units.

APR. 13, Tuesday, 8:00 PM, Stanford Medical School (Med. Ctr.) room M-104 lecture hall. Dinner: 6:00 PM, Red Cottage, 1706 El Camino, Menlo Park. Reservations: Harry Miller, (415) 321-1200, ext. 6141 by Apr. 12th.

GOLDEN GATE SUBSECTION/COMMUNICATION TECHNOLOGY/S.F. STATE COLLEGE STUDENT BRANCH APR. 21

Story on
page 7

JOINT MEETING: CAPABILITIES OF PICTUREPHONE. Gary C. Fields, Chief Engineers Dept., Pacific Telephone, S.F.

1. PROGRAMMING FUNDAMENTALS FOR ELECTRICAL ENGINEERS WITH TIME SHARING APPLICATIONS will be held on Thursdays, April 15 through June 3, 1971 at 6:30 to 8:30 PM in the Bechtel Bldg., 50 Beale St., 2nd Floor, Room C. Registration fee: IEEE members: \$10.00; Non-members: \$12.00. Make checks payable to S.F. IEEE Power Group. This class will be an introduction to computer programming for Electrical Engineers who do not have programming experience. It will emphasize time-sharing systems. The class is limited by the number of time-share terminals available. Please call Mr. W. J. Slimak, c/o PG&E Co., 245 Market St., Room 1102; (415) 781-4211 ext. 1578 for registration and other information.

2. GROUNDING PRINCIPLES AND PRACTICES: A series of technical lectures covering basic principles of system and equipment grounding. This series will begin about the second week in April and run for 8 weeks. The cost of the series will be \$7.50 for IEEE members and \$10.00 for non-members. For more information about this course contact: Michael P. Hurley, PG&E Co., 245 Market St., (415) 781-4211 ext. 3347.

The PMP group of the IEEE and the San Francisco and Santa Clara sections of ASQC are jointly sponsoring the coming course on "MICROELECTRONICS - SELECTED TOPICS." Session 1: April 20: Plastic Packaging for LSI Arrays: Technology and Reliability; Gerald K. Fehr and Desmond J. Fitzgerald, Intel Corp. Session 2: April 27: Failure Analysis; Phillip A. Coffman, Program Reliability Engineer, Lockheed. Session 3: May 4: Hybrid Process Technology and Control; Dr. Don McWilliams, Chief Engineer, Dickson Electronics. Session 4: May 11: Microelectronic Testing; speaker to be announced. Because of the limited space available and the fact that some people were turned away from the last microelectronics course, advance

CALENDAR

APR. 21, Wednesday, 8:00 PM, Room 101, Science Bldg., S.F. State College, 1600 Holloway, San Francisco. No-host cocktails and dinner: 6:00 PM, Red Chimney, Stonestown, S.F. Reservations: Larry Katzeff, (415) 399-6225 by Apr. 20th.

INFORMATION THEORY

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APR. 15

APR. 15, Thursday, 8:30 PM, SRI, Bldg. 1, 333 Ravenswood Ave., Menlo Park. Dinner: 6:00 PM, Ming's of Palo Alto, 1700 Embarcadero, East Palo Alto. Reservations: Geri Gibling, (415) 326-6200, ext. 3881 by Apr. 14th.

MAGNETICS

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APR. 6

APR. 6, Tuesday, 7:30 PM, Lockheed Research Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto. Happy hour: 6:00 and dinner 6:30 PM, Rickey's Hyatt House, 4219 El Camino, Palo Alto. Reservations: Iris Strassner, (415) 367-3112 by Apr. 5th.

MICROWAVE THEORY & TECHNIQUES/ELECTRON DEVICES

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APR. 26

APR. 26, Monday, 8:00 PM, Santa Clara facility of Hewlett-Packard Co., 5301 Stevens Creek Blvd., Santa Clara. No dinner.

NUCLEAR SCIENCE/FRENCH ENGINEERS IN U.S.

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APR. 23

APR. 23, Friday, 8:30 PM, International Inn, 326 Airport Blvd., South S.F. Dinner: 7:00 PM, roast beef \$6.50 incl. tax & tip. Reservations: Mrs. Le Gall, (415) 321-6452 or Mrs. June Costa (415) 447-1100, ext. 7195, by Apr. 16th.

POWER SOCIETY

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APR. 13

APR. 13, Tuesday, 7:30 PM, Engineers Club of S.F., 160 Sansome St., San Francisco. Cocktail hour: 5:30, dinner 6:30 PM. Reservations: (415) 321-4184 by noon Apr. 13th.

RELIABILITY

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APR. 8

APR. 8, Thursday, 8:00 PM, Stanford University Physics Lecture Hall — PH 101. Dinner: Stanford View Restaurant, El Camino at Stanford Ave., Palo Alto. Happy hour at 6:00 and dinner at 6:30 PM. Non-members welcome. Reservations: Phil Guillot (408) 742-7026 by Apr. 7th.

SANTA CLARA VALLEY SUBSECTION/USNPGS

STUDENT BRANCH

APR. 17

APR. 17, Saturday, 10 AM and 12 noon, Comsat Earth Station near Jamesburg. No host cocktails at 5:00 PM and dinner at 6:00 PM at the Officers Club, USNPGS, Monterey. Cost of dinner is \$4.00 (Coq a vin). Reservations: (Monterey) Lt.jg J. L. Zavadil (408) 373-5024; (San Jose) Audrey Neal at (408) 291-4837 by Apr. 12th.

SYSTEMS SCIENCE & CYBERNETICS

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APR. 19

APR. 19, SRI, 333 Ravenswood Ave., Menlo Park. Dinner: Red Cottage, 1706 El Camino, M.P. 6:00 PM. Reservations: Section office: (415) 327-6622 by noon, Apr. 5th.

VEHICULAR TECHNOLOGY

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APR. 19

APR. 19, Monday, 8:00 PM, Tia Maria Mexican Restaurant, 5 Marina Blvd., San Leandro Marina, San Leandro. Cocktails: 6:00 and dinner 7:00 PM. Reservations: Elizabeth Hudson, (415) 894-3127 by Apr. 16th.

SOME NEW APPLICATIONS OF RKHS. Thomas Kailath, Prof. of Electrical Engineering, Stanford University.

FAST TRANSIENT RECORDING. Leonard Schwee, Naval Ordnance Laboratory.

JOINT MEETING: AVALANCHE DIODES AS HIGH POWER MICROWAVE SOURCES. Dr. K. K. N. Chang, Head, Solid State Microwave Devices, RCA Labs, Princeton, N.J.

JOINT MEETING: ENGINEERING AND ECOLOGY. Dr. Edward Teller, Lawrence Radiation Lab., Livermore. Wives invited.

CRYOGENIC CABLE SYSTEMS. Gerald R. Fox, Mgr., Thermal Branch, General Electric Co.'s Mechanical Engrg. Lab.

IS A 5-YEAR WARRANTY ON MOS/LSI SYSTEMS UNREASONABLE? Charles M. Botchek, Mgr., MOS Engineering, Larse Corp., Palo Alto.

TOUR OF COMSAT EARTH STATION. JOINT MEETING. Tour is \$100 per person. 2 tours: leaving USNPGS grounds at 10 AM and at 12 noon.

OPTIMIZATION IN A FUZZY ENVIRONMENT. Dr. Jean-Paul Jacob, Systems Dept., IBM Research Lab., San Jose.

RADIO REGULATION IN ISRAEL — A CONTRAST TO U.S. PRACTICE. Philip M. Kane, Electronic Engr., FCC Field Engr. Bureau, San Francisco.

AEROSPACE & ELECTRONIC SYSTEMS

At the Aerospace & Electronic Systems Chapter meeting, Mr. Harry K. Berland of Philco-Ford Corporation, WDL Division, Palo Alto, California, will present "Satellite Communications Earth Station for the Republic of Korea" on Thursday evening April 15. This Satellite Communications Earth Station was formally commissioned by the Ministry of Communications on June 2, 1970 for commercial telecommunications service in conjunction with the Intelsat III Pacific Satellite. This new facility provides highly reliable telephony and data communications between the Republic of Korea and the United States, the Philippines, Hong Kong and the Republic of China. Operation with Vietnam will be initiated in 1971. In addition, both monochrome and color television service is available with any earth station accessing the Pacific Intelsat III Satellite. The facility has also been planned for a second antenna with associated electronic equipment to access the Intelsat III Indian Ocean Satellite at a later date. The paper summarizes the site selection criteria, terrestrial interconnect facilities, baseband arrangements, earth station radio equipment configuration and antenna description including a performance summary.

Mr. Berland, Manager of the Systems Engineering Department of ground Terminal Operations at Philco-Ford, Palo Alto, has engaged in systems engineering on military satellite ground terminal since 1962. For the last five years his activities have been devoted to INTELSAT communications satellite earth stations. He served as Chief Engineer for the design and construction of the Korean earth station. See Calendar for details.

ANTENNAS & PROPAGATION

Following a very successful February meeting in the East Bay, the Antennas & Propagation Chapter will once again meet at the Univ. of Calif. in Berkeley for the April 21st meeting. Prof. K. K. Mei will present a talk entitled, "A New Liberation in Log-Periodic Array Design."

There seems to be a general belief among antenna designers that to array several log-periodic antennas, each L-P in the array must be the same or a slight perturbation of the other. This talk will show that LPA's of different families may still be arrayed to give frequency independent performance. This additional degree of freedom has led to new designs of L-P arrays for high gain and

Cont. on Pg. 6

registration is recommended. Send check for \$5.00 to Jeff Schlageter, Fairchild Semiconductor, M.D. 20-2811, 464 Ellis St., Mt. View; (415) 962-3393.

A ONE-DAY SHORT COURSE ON DIGITAL SYSTEM DESIGN will be offered on April 24, 1971, at the main auditorium Stanford Linear Accelerator Center. This is the fourth in a series of short courses being presented by the San Francisco chapter of the IEEE Circuit Theory Group. Professor H. H. Loomis, Jr. is the organizer and will present the first lecture, an introduction to switching circuits. He is now Chairman of the Department of Electrical Engineering at the University of California, Davis. Professor L. Hatfield, Assistant Professor of Electrical Engineering at the University of California, Davis, will present the second lecture, Introduction to Sequential Machines. Mr. H. Bogert will present the third lecture on Characteristics of Available Logic Devices and Techniques for their specification. He is Manager of MOS Systems for Siliconics Incorporated. The application of simulation techniques to digital systems will be presented in the fourth lecture by Mr. John Lum, member of the staff of Lawrence Radiation Laboratory, Livermore, California. Professors Loomis and Hatfield will present the final lecture of the day dealing with the design of digital systems and will treat several design examples in the course of the lecture.

The fee for this course is \$10.00 for IEEE regular members, \$5.00 for student members and \$20.00 for non-members. The fee also includes the lecture notes to be handed out and lunch at the SLAC cafeteria. **TO INSURE ENROLLMENT, COMPLETE REGISTRATION MUST BE RECEIVED BEFORE APRIL 12, 1971.** For additional information, write or call: Dr. A. B. Grebene, Signetics Corporation, 811 East Arques Avenue, Sunnyvale, California 94086, Phone: (408) 739-7700.



1971 IEEE REGION SIX CONFERENCE

The IEEE Sacramento Section invites you to attend the 1971 Region Six Conference, May 11-13 at the Wood Lake Inn, Sacramento, California. The theme of the conference is "Engineering for the Conservation of Mankind."

The technical sessions listed below cover a broad spectrum of subjects of interest to the engineering profession. In addition, field trips to Rancho Seco Nuclear Power Plant and to the world-wide communication and computer switching network at McClellan Air Force Base are scheduled. A Student Paper Contest and Awards Luncheon are featured activities. A program for the Ladies is also planned.

A Conference Record will be available at the conference.

Tuesday Morning, May 11

Registration

Session 1A THE ENGINEER STARTS A BUSINESS

Co-Chairmen: R. Pizer, Electro-Physics Co., Folsom; R. Poucher, Hewlett-Packard Co., Sacramento
 AVENUES AND APPROACHES OF FINANCING A CORPORATION, W. Gilbert, Mitchell, Jones and Templeton, Sacramento
 BUILDING AN EFFECTIVE SALES AND PRODUCT MARKETING ORGANIZATION, F. J. Burge, Data Technology Corp., Palo Alto
 REAL MARKETING COSTS, J. F. O'Halloran, O'Halloran Associates, North Hollywood
 YOU MUST SELL IT, H. B. McLaughlin, Laser Technology, Inc., North Hollywood
 CONSULTING ENGINEER, S. Liss, Liss Engineering, Costa Mesa, Ca.
 PANEL DISCUSSION: Questions and Answers

Session 1B COMPUTER HARDWARE AND SOFTWARE

Co-Chairmen: W. Karplus, UCLA, Los Angeles; R. Short, Oregon State University, Corvallis
 COMPUTER HARDWARE AND FIRMWARE, W. W. Hodge, J. K. Hovik, Data Pack, Inc., Santa Ana
 A NEW LANGUAGE FOR MODEL IDENTIFICATION AND OTHER PROBLEM SOLVING AIDS, L. Levine, UCLA, Los Angeles
 BATCH TO INTERACTIVE CONVERSION OF DIGITAL SIMULATION LANGUAGES, R. E. Fairley, UCLA, Los Angeles
 A COMPUTER ALGORITHM FOR SYNTHESIS OF MULTIPLE-OUTPUT, FAN-IN LIMITED NAND NETWORKS, S.Y.H. Su, University of California, Berkeley
 NUMERICAL IMAGE RESTORATION, M. P. Ekstrom, O. L. Rater, Lawrence Radiation Lab, Univ. of California, Livermore
 A UNIVERSAL INPUT-OUTPUT BUFFER INTERFACE FOR COMPUTER CONTROLLED TEST SYSTEMS, R. Lloyd, G. Wend, T. Keller, Westinghouse Electric Corp., Baltimore, Md.

KEYNOTE LUNCHEON, Tuesday Noon, May 11

Tuesday Afternoon, May 11

Session 2A FIELD TRIP

Rancho Seco Nuclear Power Plant

Session 2B POLLUTION STANDARDS AND MEASUREMENTS

Co-Chairmen: V. Cartwright, Cartwright Aerial Surveys, Inc., Sacto., L. Bourget, California Division of Highways, Sacramento
 THE AIRBORNE APPROACH TO ENVIRONMENTAL SURVEILLANCE, G. W. Fraga, California Regional Water Quality Control Board, Santa Rosa, California
 AIR POLLUTION MONITOR, S. S. Meyers, Department of Physics, Madison College, Harrisonburg, Virginia
 HIGHWAY GENERATED AIR POLLUTION-STANDARDS AND MEASUREMENTS, E. Shirley, Calif. Division of Highways
 REMOTE SENSING OF LOW DISSOLVED OXYGEN WATERS, L. W. Hom, Dept. of Civil Engineering, Sacramento State College, Sa.
 TELEMETERING IN WATER POLLUTION CONTROL, W. N. Waggener, EMR-Telemetry, Sarasota, Florida
 ENVIRONMENTAL FEATURES AND ADVANTAGES OF RAPID TRANSIT SYSTEMS, G. P. Wilson, Wilson, Ihrig & Asso., Berkeley

Session 2C COMPUTER APPLICATION AND COMPUTER-AIDED DESIGN I

Co-Chairmen: R. M. Bakke, IBM Corp., Palo Alto, Calif.; L. P. McNamee, UCLA, Los Angeles
 COMPUTER PROCESSING OF NATURAL IMAGES, H. Andrews, Dept. of Electrical Engineering, USC, Los Angeles

SOME ASPECTS OF PROCESS COMPUTERS IN DATA ACQUISITION, TRANSMISSION AND CONTROL, S. M. Yousif, Dept. of Electrical Engineering, Sacramento State College, Sacramento
 AN EVALUATION OF A NEW HYBRID CONCEPT IN MATCHED FILTERS, R. N. Nilsen, Dept. of Computer Science, UCLA, L.A.
 DESIGN OF MULTIPLE-OUTPUT LOGIC NETWORKS BY A COMPUTER WITH SMALL MEMORY SPACE, S. Y. H. Su, Dept. of Electrical Engineering and Computer Sciences, Univ. of Calif., Berkeley; R. A. Weingarten, Dept. of Electrical Engineering, New York University

Wednesday Morning, May 12

Session 3A FIELD TRIP

World-Wide Communications and Computer Switching Network, McClellan Air Force Base, Sacramento

Session 3B POWER GENERATION

Co-Chairmen: K. Davis, Bechtel Corp., San Francisco; J. A. Vreeland, Sacramento State College, Sacramento
 THE EFFECT OF ESCALATION ON FUTURE ELECTRIC UTILITY FUEL COSTS, H. G. Houser, Westinghouse Electric Corp., East Pittsburgh, Pa.
 CASTAIC POWER PROJECT, A. R. Shasky, R. W. Eick, Dept. of Water and Power, Los Angeles
 DESIGN FEATURES OF THE PRESSURIZED WATER REACTOR, W. A. Webb, Westinghouse Electric Corp., Pittsburgh, Pa.
 BOILING WATER REACTOR DESIGN AND PERFORMANCE, S. Levy, General Electric Co., San Jose, California
 SODIUM COOLED FAST BREEDER REACTOR DEVELOPMENT, A. Gibson, General Electric Co., Sunnyvale, California

Session 3C RECENT ADVANCES IN SOLID STATE CIRCUITS

Co-Chairmen: J. Choma, Jr., Sacramento State College; G. Temes, UCLA, Los Angeles
 SEMICONDUCTOR MEMORIES FOR THE 1970's, D. A. Hodges, Dept. of Electrical Engineering and Computer Sciences, Univ. of California, Berkeley
 COMPUTER-AIDED DESIGN OF ACTIVE INDUCTORLESS FILTERS USING FREQUENCY DEPENDENT AMPLIFIERS, S. K. Mitra, R. M. Hamilton, Dept. of Electrical Engineering, Univ. of Calif., Davis
 COMPUTER-AIDED MODELING FOR LARGE-SIGNAL OPERATION OF DIODES AND TRANSISTORS, W. L. Jones, Dept. of Electrical Engineering, Utah State Univ.; B. R. Peterson, Dept. of Electrical Engineering, Univ. of New Mexico
 A VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR WITH HIGH MODULATION SENSITIVITY, R. B. Bowlby, Motorola Inc., Mesa, Arizona; C. R. Zimmer, Dept. of Electrical Engineering, Arizona State University

Wednesday Afternoon, May 12

Session 4A COMPUTER APPLICATION AND COMPUTER-AIDED DESIGN II

Co-Chairmen: R. M. Bakke, IBM Corp., Palo Alto, California; L. P. McNamee, UCLA, Los Angeles
 FEATURE SELECTION FOR PATTERN CLASSIFICATION OF OCEANOGRAPHIC REMOTE SENSING DATA, C. E. Cross, J. H. Herzog, Dept. of Electrical Engineering, Oregon State University
 THE APPLICATION OF AN AUTOMATED TEST GENERATION CAPABILITY TO COMPLEX DIGITAL ARRAYS, D. Calhoun, Hughes Aircraft Co., Culver City, California
 THE ADVANTAGES OF BIOMEDICAL MINICOMPUTER SYSTEMS, J. M. Austin, Honeywell Information Systems, Inc., Framingham, Ma.
 APPLICATION OF COMPUTERS FOR SIMULATION MODELS FOR WAREHOUSING PROBLEMS, L. Luther, Dept. of Mechanical Engineering, Sacramento State College

Session 4B POWER SYSTEMS

Co-Chairmen: R. Connelly, Sacramento Municipal Utility District; E. Kaprielian, Pacific Gas & Electric Company
 COMPUTER PROGRAM SYSTEMS FOR CONSERVATION OF ENGINEERING ART, G. Rabe, A. Thumann, Bechtel Asso., New York
 FORECASTING OF HOURLY LOADS TO IMPROVE OPERATING DECISIONS IN POWER SYSTEMS, D. P. Lijesen, J. Rosing, QINTA Menlo Park, California
 TECHNIQUES FOR IMPROVING THE CONTROL OF BULK POWER TRANSFERS ON INTERCONNECTED SYSTEMS, N. Cohn, Leeds and Northrup Co., Philadelphia, Pa.
 GENERATOR EXCITATION CONTROL EQUIPMENT AS SYSTEM STABILIZER ON THE LOS ANGELES DEPARTMENT OF WATER POWER SYSTEM, J. B. Turner, Dept. of Water and Power, L. A.
 SYSTEM-WIDE DISTURBANCE RECORDER, R. A. Peterson, Colorado River Storage Project, Montrose, Colorado; W. E. Sell, Hathaway Instruments, Inc., Denver, Colorado

BALLOT FOR ELECTION OF OFFICERS, S.F. SECTION, 1971-72
(Consult February GRID for background of candidates.)

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IEEE San Francisco Section
701 Welch Road, Suite 2210
Palo Alto, Calif. 94304

Session 4C ELECTRONIC AND SOLID STATE DEVICES

Co-Chairmen: G. Wade, Univ. of Calif., Santa Barbara, California
S. FOR SURFACE WAVE DEVICES, R. White, Dept. of Electrical Engineering and Computer Sciences, Univ. of California, Berkeley
APPLICATION FOR SURFACE ACOUSTIC WAVE, A. Tonning, Dept. of Electrical Engineering, Univ. of California, Santa Barbara
EXCITATION LAYER ANALYSIS, D. Heald, Dept. of Electrical Engineering, Univ. of California, Santa Barbara
FILM THERMAL FLOW TRANSDUCER, J. N. Churchill, Dept. of Electrical Engineering, Univ. of California, Davis
BROADBAND MICROWAVE TRIPLER, K. Kotzebue, Dept. of Electrical Engineering, Univ. of California, Santa Barbara

Keynote, Wednesday Evening, May 12

Thursday Morning, May 13

Session 5A INSTRUMENTATION SYSTEMS

Co-Chairmen: J. Boulton, Aerojet Liquid Rocket Co., Sacto.; E. Owen, Univ. of California, Davis
CHO SECO INSTRUMENTATION, L. W. Stephenson, Sacramento Municipal Utility District, Sacramento
BOARD CHECKOUT AND MONITORING SPACE SHUTTLE VEHICLES, G. Deppe, Aerojet Liquid Rocket Co., Sacramento
MEASUREMENT OF THE IMPULSE RESPONSE OF THE SUPERCONDUCTING DATA TRANSMISSION CABLE, H. J. Jensen, Dept. of Electrical Engineering, Univ. of California, Davis
MODELING AND SIMULATION IN CALORIMETRY, B. H. Barkalow, M. Long, L. E. Rose, Bioengineering Program, Univ. of Wyoming
M. Cook, Dept. of Electrical Engineering, Sacramento State College
UNDERGRADUATE COURSE IN INSTRUMENTATION EMPHASIZING PRINCIPLES, C. G. Nelson, Dept. of Electrical Engineering, Sacramento State College

Session 5B COMMUNICATIONS AND MICROWAVES

Co-Chairmen: F. Janza, Sacramento State College; J. Jones, Philco-Ford Corp., Palo Alto, California
PROCESSING ON AIRCRAFT OR SATELLITE FOR ECOLOGICAL ASSESSMENTS AND SURVEYS, R. E. Chapman, Teledyne Ryan Corp., San Diego, California
DIGITAL SIGNALLING ABOVE 10GHz. FOR SPECTRUM CONSERVATION AND MONITORING THE ECOLOGY, C. L. Cuccia, D. W. Wazyse, J. J. Spilker, Jr., Philco-Ford Corp., Palo Alto, California
UNIVALENT CIRCUITS FOR TEM STRUCTURES WITH PERIODIC PERTURBATIONS, S. Frankel, Technical Consultant, Menlo Park, Ca.
EFFECT OF A CONTINUOUS UHF SIGNAL ON ANIMAL PHYSIOLOGY, A. J. Giarola, H. W. Woodall, Dept. of Electrical Engineering, Texas A&M Univ.; W. F. Krueger, Dept. of Poultry Science, Texas A&M University
EFFECTS OF OSCILLATOR NOISE ON BIPHASE AND QUADRIPHASE ERROR RATE PERFORMANCE, R. J. Sherman, Philco-Ford Corp., Palo Alto, California

Session 5C SOUTHWEST SUB-REGION STUDENT PRIZE PAPER CONTEST

Co-Chairmen: J. Simes, Sacramento State College; B. Gage, Seattle Univ.

REGION SIX AWARDS LUNCHEON, Thursday Noon, May 13

Thursday Afternoon, May 13

Session 6A SPINOFFS FROM SPACE TECHNOLOGY

Co-Chairmen: J. Simes, Sacramento State College; H. Smith, Aerojet Liquid Rocket Co., Sacramento
SPINOFF BENEFITS FROM SPACE RESEARCH, B. Evans, NASA Ames Research Center
ENGINEERING APPLICATIONS OF AEROSPACE TECHNOLOGY, A. M. Cook, Dept. of Electrical Engineering, Sacramento State College
APPLICATION OF AIRCRAFT MALFUNCTION DETECTOR TO AUTOMATED AUTOMOBILE DRIVER TESTING, C. J. Kaiser, H. Haness, Lockheed Electronics Co., Plainfield, New Jersey
INHERENTLY EXPLOSION-PROOF COAL MINING, C. O. Bunn, W. W. Crutchfield, Jr., J. A. Stoops, Westinghouse Electric Corp., Baltimore, Md.

Session 6B CIRCUITS, SYSTEMS, CONTROLS AND TELEMETRY

Co-Chairmen: D. E. Rathbone, Univ. of Idaho; P. J. Sehnert, Air Force Flight Test Center, Edwards Air Force Base, California
A MANAGERIAL DECISION SYSTEM FOR AN AIRBORNE INFRA-RED FIRE DETECTION DEVICE, W. G. O'Regan, Pacific Southwest Forest and Range Experiment Station and School of Forestry, Univ. of Calif., Berkeley; P. Kourtz, Canadian Dept. of Fishery and Forestry
A NEW SYSTEM FOR DETECTING LATENT FOREST FIRES, F. H. Madden, U. S. Dept. of Agriculture, Forest Service, Missoula, Montana
THE CHARACTERIZATION OF INFLUENCE IN SOCIAL PROCESSES, J. W. LaPatra, Dept. of Electrical Engineering, Univ. of California, Davis
NETWORK APPROACH TO THE INTERNATIONAL ARMS RACE, K. Burian, Dept. of Information Engineering, Univ. of Illinois at Chicago Circle
DYNAMIC OPTIMIZATION OF POWER SYSTEMS, S. Yousif, Dept. of Electrical Engineering, Sacramento State College
GENERATION OF HIGHER ORDER SENSITIVITY FUNCTIONS THROUGH ESSENTIAL PARAMETERS, J. L. Kopicka, Bechtel Corp., Los Angeles; J. G. Simes, Dept. of Electrical Engineering, Sacramento State College

Session 6C BIOMEDICAL ELECTRONICS

Co-Chairmen: M. D. Schwartz, California State College, Long Beach; W. Waring, Univ. of California, Davis
FUTURE OF BIOMEDICAL ELECTRONICS, M. D. Schwartz, Dept. of Electrical Engineering, California State College, Long Beach
AUTOMATION IN THE CLINICAL LABORATORY, M. Larson, N. H. Peckham, United Medical Laboratories, Portland, Oregon
ENGINEERING CONTRIBUTIONS TO REHABILITATION AT RANCHO LOS AMIGOS HOSPITAL, D. McNeal, Rancho Los Amigos Hospital, Downey, California
ENGINEERING ASPECTS AND OPPORTUNITIES OF HEMODIALYSIS, J. Miller, Wadsworth Veterans Administration Hospital, Los Angeles
REAL TIME ANALYSIS OF PULMONARY FUNCTION DATA, P. Griffith, Central Research Laboratories, Palo Alto, California
PANEL DISCUSSION: Questions and Answers

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for circular polarization. The design procedures and the basic approach from K-B diagrams will be included in the talk.

Dr. Mei is Associate Professor of Electrical Engineering and Computer Sciences. He has been engaged in the research of numerical methods, antennas and plasmas since joining the University in 1962. He received the G-AP Achievement Award of 1967. See calendar for details.

AUDIO & ELECTROACOUSTICS

Dr. John M. Chowning, professor of music at Stanford University, will be guest speaker at the April 22nd meeting of the Audio and Electroacoustics chapter.

Dr. Chowning utilized a digital computer to generate four channels of information which he then recorded on tape. The computer program controlled the apparent location and movement of a synthesized sound in an illusory acoustical space by distributing the amplitude of direct and reverberant signals between loudspeakers to provide the angular and distance information, and introducing a Doppler shift to enhance velocity information.

The basic method will be presented in detail and an interesting demonstration is planned to include the recorded, computer-generated sounds and a live experiment with natural sounds, voices and music.

The meeting will be held April 22 at 7:30 P.M. in the cafeteria of the GRT Corp. Corporate Headquarters Building, 1287 No. Lawrence Expressway, Sunnyvale. Additional information is available from Jim Wood, 734-2910.

AUTOMATIC CONTROL

"A Survey of New Developments in Dynamic Programming Computational Procedures" will be presented at the April 20 Automatic Control Chapter meeting by Dr. Robert E. Larson of Systems Control, Inc. Larson's talk will summarize recent progress in reducing the computational requirements of dynamic programming.

The talk begins with a review of the theory of dynamic programming and the standard computational algorithm. Several new dynamic programming computational procedures are then discussed. Procedures capable of attacking high dimensional problems are emphasized, including techniques based on decomposition and coordination principles and algorithms suited for implementation on fourth-generation parallel-processing and pipeline machines. Recent applications in the areas of facility expansion

planning, resource allocation, trajectory optimization, generation of electric power from mixed hydro-thermal-nuclear-interchange systems and urban systems engineering are presented.

Robert E. Larson received his S.B. degree from M.I.T. and his M.S. and Ph.D. degrees from Stanford, all in electrical engineering. From 1964 to 1968 he was with the Information and Control Laboratory of Stanford Research Institute. In 1968 he joined Systems Control, Inc., where he is currently Vice President for Technical Operations.

Dr. Larson received G-AC Best Paper Award in 1965 and the 1968 Donald P. Eckman Award for outstanding achievement in the field of automatic control from the American Automatic Control Council. He also was named the Outstanding Young Electrical Engineer for 1969 by Eta Kappa Nu. See Calendar.

COMPUTER

April 27 is wives night for the Computer Group. Wives are especially invited to attend the talk and/or the preceding dinner. Kenneth Colby, M.D., will speak on his use of a computer in the treatment of Autistic Children. This research is a most interesting and important new use of computers. One can hope that the future will bring many more such applications of computers as a catalyst to improve the quality of life. The PDP 6/10 computer program to be described is designed to stimulate language development in nonspeaking "autistic" children who, for unknown reasons, have failed to speak or who speak very little. The child interacts with a display keyboard console, pressing keys and eliciting changing displays and voices or other sounds. Experience with 22 children thus far has been encouraging.

Dr. Colby is a psychiatrist currently serving as Senior Research Associate in the Computer Science Dept., Stanford University and as Career Scientist sponsored by National Institute of Mental Health. He is the director of the Higher Mental Function Project, Stanford Artificial Intelligence Project. He received his B.S. and M.D. degrees from Yale University and psychiatric training at UC, University of Cincinnati, Mt. Zion Hospital in S.F. and the S.F. Psychoanalytic Institute.

See calendar for meeting details.

EAST BAY SUBSECTION

The East Bay Subsection, at its April 26th meeting, will hear Mr. Harold Bissell discuss the conflicts in the allocation of the uses of the California coastline.

A Comprehensive Ocean Area Plan (COAP) is being prepared by the Calif. Dept. of Navigation and Ocean Development. Following several years of preliminary study and recommendations concerning California's marine and coastal problems, this COAP is being prepared in order to develop, encourage and maintain the orderly, long-range conservation and development of California's marine and coastal uses so as to insure wise multiple use in the total public interest. Ninety entities of local, Governmental, private developers and Federal agencies have participated.

Mr. Bissell is presently Executive Secretary, Interagency Council for Ocean Resources. Formerly, he was Assistant Chief, Coastal Resources, Calif. Dept. of Fish & Game. He was also Chairman of Resources Agency, Power Plant Siting committee, and Chairman, Resources Agency, Ocean Area Work Team. He received his BA in biochemistry at Ohio State University and his MA in zoology at UC, Berkeley. See calendar for meeting details.

ELECTROMAGNETIC COMPATIBILITY

The presentation at the April 19th meeting of the Electromagnetic Compatibility Chapter will be "Interference Level Prediction Techniques." This is a topic of great interest in view of the ever-increasing pressure being brought to bear on hardware suppliers by government agencies and prime contractors to define interference conditions and spurious emission levels far in advance of hardware fabrication and testing. The engineer must not only identify a potential EMI signal source but also analyze the signal for its spectrum and analyze its propagation path to predict the signal's level as a spurious emission.

The speaker will be Robert B. Cowdell, EMC Group Supervisor at ITT Gilfillan, Van Nuys, Calif. Mr. Cowdell holds an MSEE degree from U.S.C. He is uniquely qualified on this subject because of his studies, laboratory researches and many published papers. He also has 10 years experience as an EMC field consultant with the Genistron Division of Genisco Technology Corp. See Calendar for details.

ENGINEERING MGM'T. / AUDIO & ELECTRO- ACOUSTICS

Where do we go from here? This is a gnawing question of the times for the typical IEEE member. With layoffs all around, inflation rampant, obsolescence still a fear, now more than ever before

the IEEE should be providing leadership and guidance so sorely needed. From reading the letters to the Editor in IEEE Spectrum, there APPEARS to be a wide divergence between what the IEEE is doing and what some members think should be done.

The April 14th panel meeting, sponsored jointly by the Engineering Management and Audio & Electroacoustics Chapters, will provide a forum for giving some constructive viewpoints for IEEE non-technical direction and will include our IEEE Region 6 Director with firsthand accounts of the March IEEE Board of Directors' meeting and four other highly-knowledgeable representatives of similar professional associations with views of their organizations' progress and evolution. These views, with following audience participation, should not only be highly informative, but also, hopefully, of value in re-shaping our individual and collective resolve and direction. The panel members are: Mrs. Lois P. Mitchell, Exec. Secty, Santa Clara County Bar Association (ABA); Joseph F. Donovan, Exec. Director, Santa Clara County Medical Society (AMA), John J. Guarrera, Director, Region 6 (IEEE), John C. McLean, President Lockheed Salaried Employees Association, AFL-CIO local 2305 (LSEA) and Keith W. Henderson, National Director, National Society of Professional Engineers (NSPE). The moderator is Philip S. Steinberg, PG-EM Vice Chairman. See Calendar for details of meeting.

ENGINEERING IN MEDICINE & BIOLOGY

Dr. Daniel A. Brody will address the San Francisco Group Chapter of Engineering in Medicine and Biology with a series lecture titled "APPLICATIONS OF ENGINEERING PRINCIPLES AND METHODS TO ELECTROCARDIOGRAPHY."

Dr. Brody received his BS degree in Physics from Case Institute of Technology in 1936 and the M.D. degree from Western Reserve University, Cleveland, Ohio, in 1940. In 1962 he was granted a Research Career Award by the National Institutes of Health of the U.S. Public Health Service. Presently he is Professor of Medicine and Physiology and Chairman of the Division of Clinical Physiology at the University of Tennessee Medical Units, Memphis. He is currently serving on the editorial boards of the AMERICAN HEART JOURNAL and CIRCULATION.

This lecture involves a discussion of various engineering approaches to the basic principles of electrocardiography. In brief, this includes the heart as a

current generator, conduction mechanisms along specialized pathways, and throughout the volume conductor, the influence of phase inhomogeneities and electrical anisotropy of the volume conductor. Special forms of signal processing and patient surveillance will also be highlighted.

Dr. Brody will present a one-hour lecture followed by a break and a discussion period. See Calendar for details and reservations.

G. G. SUBSECTION / COM. TECH.

No other invention has affected the daily lives of so many people as the telephone. Now PICTUREPHONE®, being introduced into nationwide service promises to have a similar effect. Most people visualize PICTUREPHONE® as nothing more than a face added to the voice, but its computer access capabilities make it a boon to personal communication. Imagine a CRT terminal in every home with the ability to transmit and receive pictures in full color at a reasonable price — it's coming!

On April 21, the Golden Gate Subsection and the Communication Technology Group will co-sponsor with the S.F. State College Student Chapter a talk and demonstration on PICTUREPHONE's present state of the art. The speaker, Mr. Gary C. Fields is an engineer with the Bay Area Chief Engineer's Department of Pacific Telephone. He is presently involved with initial PICTUREPHONE installations in the Bay Area. His talk will cover the capabilities of PICTUREPHONE with emphasis on computer access as well as some engineering problems involved with providing service.

Mr. Fields attended California State Polytechnic College in San Luis Obispo and is a graduate of A.T. & T.'s Data Communications School in Coopers-town, New York.

All of those attending the meeting are invited to "no host" cocktails and dinner starting at 6:00 PM at the Red Chimney in Stonestown. See Calendar for details.

INFORMATION THEORY

Reproducing Kernel Hilbert Spaces (RKHS) are a special class of Hilbert spaces with some striking properties. By now their role in the detection of known signals in Gaussian noise is well understood. At the April 15th meeting of the Information Theory Chapter, Dr. Thomas Kailath will show how that understanding can be extended to obtain new results in the problems of discrimination between two general Gaussian random processes and between two non-Gaussian processes. For the former, he

will first show how the likelihood ratio (LR) can be effectively determined by knowledge only of the apparently simpler solution for the known signal problem. Secondly, by using some extended notions of causality and innovations processes in RKHS, he will show how to obtain a generalized estimator-correlator formula. Then he will outline somewhat similar results for the nonGaussian problem, this time making use of the RKHS generated by the characteristic functional of the process.

Thomas Kailath received the Bachelor's degree in telecommunications engineering from the University of Poona, Poona, India, and the M.S. and D.Sc. degrees from the Massachusetts Institute of Technology.

During 1956-1957 he was employed by the L. D. College of Engineering, Ahmedabad, India; during 1961-1962 by the Jet Propulsion Laboratories, Pasadena, Calif. where he also taught part-time at the California Institute of Technology. Since then he has been at Stanford University, Stanford, Calif., where he is now Professor of Electrical Engineering. His research interests are in statistical data processing in communications and control. He was co-author of a paper on feedback systems that received the 1967 Information Theory Group Award. He is Consulting Editor for a Prentice-Hall series of books on information theory. See Calendar.

MAGNETICS

A method of recording applicable from d.c. to risetimes of 1 nsec. will be discussed on April 6, at the Magnetics Chapter meeting by Mr. Leonard Schwee of the Naval Ordnance Laboratory. During the past four years Mr. Schwee and Mr. Henry Irons have developed, tested, and produced several recorders using magnetic thin films. These recorders have a dynamic range of 30 dB, are pocket-sized, and are being used to replace oscilloscope-camera combinations in radiation environments.

Mr. Schwee received his BS in 1960 at Creighton University and did graduate work at the University of Maryland. He has been involved with magnetic materials and devices at NOL for the past ten years.

See Calendar for details.

MICROWAVE THEORY & TECHNIQUES / ELECTRON DEVICES

Dr. K. K. N. Chang, Head, Solid State Microwave Devices, RCA Laboratories, Princeton, N.J., will describe the performance and design of avalanche diodes for high power microwave sources at a joint meeting of the Microwave Theory & Techniques and the

Electron Devices Chapters on April 26th.

In the present state of the art, silicon avalanche diodes operating in the high efficiency mode are capable of delivering repeatable and reproducible pulse powers of several hundred watts with 30% efficiencies at L-band frequencies. Tens of watts of output, power at lower efficiencies have also been reported with S-band diodes. Promising power and efficiency results have even been extended to C, X and K_u-bands.

More recently, high power amplification having concurrent high gain and high efficiency has been demonstrated. An output power of 70 watts at a gain of 13 dB with an efficiency of 48% has been observed.

The key to high efficiency and high power performance lies in the design of sophisticated circuits which control both fundamental and harmonic content of the generated microwave power. Several practical circuits have presently led to good experimental results. See Calendar for details.

NUCLEAR SCIENCE / FRENCH ENGINEERS IN U.S.

Dr. Edward Teller will present his thoughts on engineering and ecology at a joint meeting of the French Engineers in the United States, Inc. (a chapter of ICF) and the IEEE Nuclear Science Chapter. The meeting will be held at the International Inn in South San Francisco on April 23rd. Dinner is planned for 7:00 PM with Dr. Teller's talk at 8:30. The talk will be non-technical and wives are cordially invited to this meeting.

Dr. Teller is noted both as a scientist and as a philosopher. His talks are always interesting and thought-provoking. Reservations should be made by April 16th. See Calendar for details.

POWER GROUP

Transmitting large quantities of electrical power through densely populated metropolitan areas has presented a growing problem to the Power Industry. Aesthetic considerations and lack of space have made it necessary to construct new transmission lines underground. Consequently, extensive research is being conducted to develop economical methods of providing high voltage, high capacity, underground transmission. The application of the science of cryogenics to underground transmission cables promises to be a solution to this problem.

Mr. Gerald R. Fox will discuss the results of his recent research efforts in

cryogenic power cable design at the April 13 Power Society Meeting.

Mr. Fox is an ME graduate of the University of Rochester. He is presently responsible for research and development projects in Thermal Technology, including cryogenic cable systems, at the General Electric Research Development Center. Recently, he has been involved in extensive analytical and experimental work concerning cryogenic cables under the Electric Research Council Underground Transmission Research Program. His work has resulted in the development of preliminary design concepts for cryogenic cable systems as well as an experimental prototype. See Calendar for details.

RELIABILITY

The April meeting of the San Francisco Reliability Chapter will feature a most interesting and controversial subject entitled: "Is a 5-Year Warranty on MOS/LSI Systems Unreasonable?" This talk will be given by Charles M. Botchek, Manager of MOS Engineering for the Larse Corporation of Palo Alto.

Some of the information to be presented will parallel Mr. Botchek's own experience in helping put the new Larse Company in production on their line of MOS industrial communication devices. He states that the secret that would enable a company to offer this warranty may lie in the theory of reliability first-yield second. Mr. Botchek will also cover the methods of MOS process verification, the salient features of burn-in, and system testing of this type of microelectronic devices.

Actual design rules, applications of MOS engineering principles, and the practical implementation required to achieve the desired results will be outlined.

Since Mr. Botchek received his degree in Electrical Engineering from Washington State University in 1962 he has been active in the microelectronics departments of Boeing, Fairchild, Union Carbide, Lockheed Missiles & Space Co., and National Semiconductor. In his present position as Manager of MOS Engineering at Larse Corporation, he is responsible for all MOS/LSI activities from subsystem logic thru end-item reliability. In addition, he is teaching classes on MOS design engineering sponsored by University of California extension and Bay Area Companies. See Calendar for details.

SYSTEMS SCIENCE & CYBERNETICS

Dr. John-Paul Jacob will discuss "optimization in a fuzzy environment" at the April 19 meeting of the Systems

Science and Cybernetics Group. This terminology is used to denote an optimization process in which the goals and/or constraints on the decision variables are "fuzzy sets," that is, classes in which an element may have a "degree of membership" ranging from full membership to non-membership.

The talk will initially cover an introduction to fuzzy sets, followed by some results obtained by R. Bellman and L. Zadeh on multistage decision-making in a fuzzy environment. Finally, Dr. Jacob will show how the Kuhn-Tucker optimality conditions of mathematical programming have been formulated by L. Zadeh and the speaker for one-stage decision-making.

Dr. Jacob is a member of the Systems Department of the IBM Research Laboratory, San Jose. He is also a lecturer in the Electrical Engineering and Computer Sciences Department at U.C. Berkeley, where he received his Ph.D. in 1966.

During the past two years, Dr. Jacob has also been Scientific Development Coordinator for IBM Brazil, and has helped in the establishment of graduate programs in systems and computer sciences in Brazil. See Calendar for details.

VEHICULAR TECHNOLOGY

On April 19, the guest speaker at the Vehicular Technology Group meeting will be Philip M. Kane, discussing the radio regulation problems of the State of Israel as a contrast with U.S. practices.

Most, if not all of us, are familiar in one form or another with the American approach to radio regulation, and it may come as no surprise to realize that other countries have different attitudes and procedures in this field. Israel, as an example, is a very small, relatively new nation having rather highly-developed telecommunications, and serves as a suitable contrast to the U.S.

Mr. Kane is uniquely suited to this subject. While on a COMOI Technical Assistance Fellowship in Israel in 1964-1967, he was Assistant Engineer in Charge of the Frequency, License and Legislation Section of the Ministry of Posts Engineering Service, the regulatory Administration for the State of Israel. Since that time, he has been with the F.C.C. in the Field Engineering Bureau, San Francisco District Office.

Mr. Kane holds a BEE degree from The Cooper Union in New York, and has pursued graduate studies both in California and Israel. He is a Senior Member of the IEEE. See Calendar for meeting details.