

PUBLICATIONS

Compilation of principal recently published books and technical articles written by APL staff members.

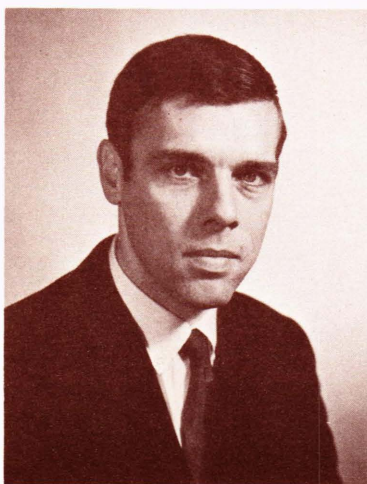
- J. Hanson and P. Robinson (Univ. of Maryland), "Characterizing Angle Tracking Radars Using Complex Variables," *IEEE Trans. Aerospace and Elec. Syst.* **AES-8**, No. 1, Jan. 1972, 35-42.
- D. W. Fox and V. G. Sigillito, "Lower and Upper Bounds to Energies of Radial Lithium," *Chem. Phys. Letters* **13**, No. 1, Feb. 1, 1972, 85-87.
- L. G. Knowles, E. F. Hart (Johns Hopkins Medical Institutions), and A. G. Schulz, "Effect of Line Spacing and Ratemeter Averaging on Lesion Detection," *J. Nuclear Med.* **13**, No. 3, Mar. 1972, 191-195.
- A. I. Mahan, C. V. Bitterli, and H. J. Unger, "Reflection and Transmission Properties of Cylindrically Guided Electromagnetic Waves," *J. Opt. Soc. Amer.* **62**, No. 3, Mar. 1972, 361-368.
- R. A. Meyer, "Optical Beam Steering Using a Multichannel Lithium Tantalate Crystal," *Appl. Optics* **11**, No. 3, Mar. 1972, 613-616.
- R. W. Hart, "Theory of Neural Mediation of Intraocular Dynamics," *Bull. Math. Biophys.* **34**, No. 1, Mar. 1972, 113-148.
- J. R. Kuttler, "Remarks on a Stekloff Eigenvalue Problem," *SIAM, J. Numer. Anal.* **9**, No. 1, Mar. 1972, 1-5.
- R. I. Joseph (The Johns Hopkins Univ.) and G. D. Smith (APL), "Propagation in an Evaporation Duct: Results in Some Simple Analytic Models," *Radio Sci.* **7**, No. 4, Apr. 1972, 433-441.
- M. H. Friedman, "Mass Transfer in the Cornea. II. Ion Transport and Electrical Properties of a Series Membrane Tissue," *Biophys. J.* **12**, No. 4 Apr. 1972, 325-350.
- J. C. Pirkle, Jr. and V. G. Sigillito, "A Variational Approach to Low Peclet Number Heat Transfer in Laminar Flow," *J. Comp. Phys.* **9**, No. 2, Apr. 1972, 207-221.
- Vivian O'Brien, "On Solutions to the Poisson Equations of Hydrodynamics and Other Physical Problems," *J. Franklin Inst.* **293**, No. 4, Apr. 1972, 285-289.
- N. H. Choksy, "Comments on 'On Errors in Published Formulas for the Noise-Response Integrals I_n ,'" *Proc. IEEE* **60**, No. 4, Apr. 1972, 446.
- S. W. Kahng, "Best L_p Approximation," *Math. Comp.* **26**, No. 118, Apr. 1972, 505-508.
- L. W. Ehrlich, "Coupled Harmonic Equations, SOR, and Chebyshev Acceleration," *Math. Comp.* **26**, No. 118, Apr. 1972, 335-343.
- C. B. Barger, R. L. McCally, P. E. R. Tatham, S. M. Cannon, and R. W. Hart, "Light-Beating Spectrum of Erythrocyte Ghosts," *Phys. Rev. Letters* **28**, No. 17, Apr. 24, 1972, 1105-1107.
- A. M. Stone, "Some Remarks on Tactical Warfare," *J. Defense Res., Series B: Tactical Warfare*, **4B**, No. 1, Spring 1972, 82-83.
- P. M. Bainum, R. E. Harkness, and Willem Stuiver (Univ. of Hawaii), "Attitude Stability and Damping of a Tethered Orbiting Interferometer Satellite System," *J. Astro. Sci.* **19**, No. 5, Mar-Apr. 1972, 364-389.

ADDRESSES

Principal recent addresses made by APL staff members to groups and organizations outside the Laboratory.

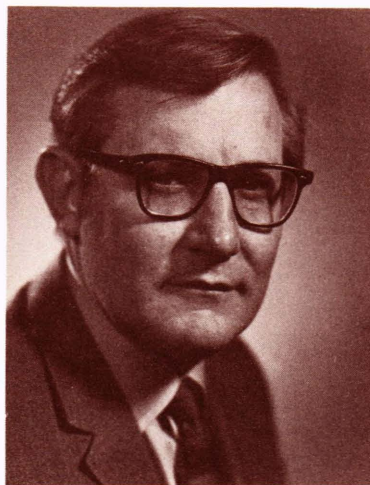
- N. A. Blum, "Optical Properties of Amorphous Silicon Films," *University of Maryland Physics Department Colloquium*, March 13, 1972.
- F. W. Schenkel, "A Self Deployable High Attenuation Light Shade for Spaceborne Astronomical Sensors" and "Star/Sensor/Mapper for the Small Astronomy Satellites," *SPIE Seminar on Instrumentation in Astronomy*, Tucson, Arizona, March 13-15, 1972.
- The following four addresses were presented at the *American Physical Society*, Atlantic City, New Jersey, March 27-30, 1972:
- J. Bohandy, B. F. Kim, and C. K. Jen, "Optical Spectra of Hematoporphyrins;"
- S. M. Bose (Drexel U.), K. Moorjani (APL), T. Tanaka (Catholic U. of America), and M. Sokoloski (Harry Diamond Labs.), "Self-Consistent Treatment of Disordered Ferromagnetic Binary Alloys in the Pair-Theory of Two-Site Coherent Potential Approximation;"
- R. A. Farrell and R. L. McCally, "Light Scattering Studies of Tissue Ultrastructure. I. Theory of Corneal Transparency and Its Loss with Swelling;"
- R. L. McCally and R. A. Farrell, "Light Scattering Studies of Tissue Ultrastructure. II. Wavelength Dependence of Corneal Transmissivity."
- C. B. Barger, R. L. McCally, R. W. Hart, and S. M. Cannon, "Light-Beating Spectrum of Erythrocyte and Erythrocyte Ghosts," *Massachusetts Institute of Technology Conference on the Spectral of Light Scattering from Biological Molecules*, Cambridge, April 10-11, 1972.
- T. G. Konrad and Freda L. Robison, "Simultaneous Measurements of Radar Reflectivity and Refractive Index Spectra in Clear Air Convection," *International Union of Radio Science*, Washington, D. C., April 13-15, 1972.

WITH THE AUTHORS



T. O. Poehler, co-author of "Chemical Lasers," is an earlier contributor to the *Digest*; he was co-author of "Cyclotron Resonance in Solid-State Plasma," which was published in the May-June 1970 issue. Dr. Poehler, a native of Baltimore, received the B. S., M. S., and Ph.D. degrees in electrical engineering from The Johns Hopkins University. From 1958 to 1962 he was a member of the research staff of the Johns Hopkins Institute for Cooperative Research. A specialist in solid-state physics, semiconductors, thin films, and optical lasers, Dr. Poehler joined APL in 1963 as an engineer in the Microelectronics Group. In 1965 he was appointed a physicist in the Microwave Physics Group of the Research Center; in 1971 he was appointed Assistant Group Supervisor of the Plasma Dynamics Research Group. During the last few years he has studied several properties of indium antimonide, cyclotron resonant absorption in compound semiconductors, and characteristics of far infrared lasers. Dr. Poehler received the National Capital Award for engineering in 1971 and is a member of the American Physical Society, the Institute of Electrical and Electronics Engineers, and the AAAS.

R. E. Walker, co-author of "Chemical Lasers," is an earlier contributor to the *Digest*, having been a co-author of "Secondary Gas Injection Thrust Vector Control," which was published in the March-April 1963 issue. A native of South Dakota, he received the B. S. degree from the South Dakota School of Mines and Technology and the M. S. and Ph. D. degrees in physics from the Uni-



versity of Maryland. Dr. Walker came to APL in 1951 as a specialist in gas physics, and was originally assigned to the missile Launching and Propulsion Group. From 1961 to 1967 he worked largely on thrust vector control and augmentation for solid-propellant rocket motors. Since 1967 he has been a member of the Excitation Mechanisms Group of the Research Center where he has been working on spectroscopy, medical engineering, and laser physics. Dr. Walker received the National Capital Award, Outstanding Young Scientist, in 1964 and the Washington Academy of Sciences 1965 annual award for Engineering Sciences. He is a member of the American Physical Society.



Helen S. Hopfield, author of "Tropospheric Refraction Effects on Satellite Range Measurements," was born in Fort Atkinson, Wisconsin. She received the A. B. degree in physics from Colorado College and the M. A., also in physics, from Mount Holyoke College. She has done additional work toward the Ph. D. at the University of California and the University of Maryland. Employed at APL in 1943, Mrs. Hopfield was originally assigned to the Gun Director Project. She later worked on the reduction of guided-missile field-test data, was a member of the Research Center staff from 1947 to 1950, and then she evaluated missile performance from flight-test data while in the Terrier/Tartar Division. Since 1959 she has been a member of the Space Development Department staff where she has made studies pertaining to analysis of satellite orbit data and development of a correction for the tropospheric refraction of a satellite signal, for purposes of navigation and geodesy. Mrs. Hopfield is a member of the American Physical Society, the Philosophical Society of Washington, and the American Geophysical Union.