

RICE UNIVERSITY

HOUSTON, TEXAS

77001

June 19, 1970

LABORATORY FOR
COMPUTER SCIENCE AND ENGINEERING

713-528-4141
EXT. 447

REPRINTS, PREPRINTS, PAPERS, and THESES prepared with the aid of the Rice Computer. September 1964 - June 1970.

Microwave Spectrum of Methyl Thionylamine, V.M. Rao, James T. Yardley and R.F. Curl, Jr., J. Chem. Phys., 42, 284 (1965).

Microwave Spectrum of Methyl Vinyl Ketone, Peter D. Foster, V.M. Rao and R.F. Curl, J. Chem. Phys., 43, 1064 (1965).

Microwave Spectrum of Methyl Azide, W.M. Salathiel and R.F. Curl, Jr., J. Chem. Phys., 44, 1299 (1966)

Microwave Spectrum and Force Constants of SiF₂: Centrifugal Distortion, V.M. Rao and R.F. Curl, Jr., J. Chem. Phys., 45, 2032 (1966).

Millimeter Wavelength Microwave Spectrum of NO₂, R.M. Lees, R.F. Curl, Jr., and J.G. Baker, J. Chem. Phys., 45, 2037 (1966).

Microwave Spectrum of ¹⁴N¹⁶O¹⁷O, P.D. Foster, J.A. Hodgeson and R.F. Curl, Jr., J. Chem. Phys., 45, 3760 (1966).

Nuclear Spin State Equilibration Through Non-Magnetic Collisions, R.F. Curl, Jr., J.V.V. Kasper, and K.S. Pitzer, J. Chem. Phys., 46, 3220 (1967).

Microwave Spectrum, Force Constants, and Structure of SiF₂, V.M. Rao and R.F. Curl, Jr., Trans. Amer. Cryst. Assoc., 2, 183 (1966).

Microwave Spectrum of Allyl Alcohol, A.N. Murty and R.F. Curl, Jr., J. Chem. Phys., 46 4176 (1967).

Microwave Spectrum of Methyl Vinyl Sulfide, R.E. Penn and R.F. Curl, Jr., J. Mol. Spect., 24, 235 (1967).

Infrared Spectrum, Force Constants, and Thermodynamic Functions of SiF₂, V.M. Khanna, R. Hauge, R.F. Curl, and J.L. Margrave, J. Chem. Phys., 47, 5031 (1967).

Microwave Spectrum of Acryloyl Fluoride, J.J. Keirns and R.F. Curl, Jr., J. Chem. Phys., 48, (1968).

REPRINTS, PREPRINTS, PAPERS, and THESES prepared with the aid of the Rice Computer.

Theoretical Calculations of the Kinetics of the Order-Disorder Transition of Carbon Monoxide, R.F. Curl, H.P. Hopkins and K.S. Pitzer, J. Chem. Phys., 48, 4064 (1968).

Thermodynamic Properties from Intensity Measurements in Microwave Spectroscopy, R.F. Curl, Jr., J. Mol. Spect., 29, 375-383 (1969).

Assignment of Microwave Rotational Spectra by Computer, 1968. Master's Thesis by Dorothy Jean Thomas.

Studies in Microwave Spectroscopy: $^{14}\text{N}^{16}\text{O}^{17}\text{O}$, Methyl Vinyl Keton, and a Spectrometer for Unstable Molecules, 1966. PhD. Thesis by Peter D. Foster.

Studies in Microwave Spectroscopy: Methylazide and a Stark and Zeeman Modulated Fabry Perot Resonators for the Study of Unstable Molecules, 1968, PhD Thesis by William M. Salathiel.

Studies in Microwave Spectroscopy: Methyl Vinyl Sulfide and 2-Aminoethanol, 1969, PhD. Thesis by Robert E. Penn.

Body Waves as Normal and Leaking Modes. II Canadian Shield. J.Cl. DeBremaecker, 1968 N.1-Supplements al Nuovo Cimento, Series I. Vol. 6, pp 98-104. ORO-2572-14

Attenuation Measurements in the Field, J.Cl. DeBremaecker, Richard H. Godson, and Joel S. Watkins, Geophysics, Vol. XXXI, No. 3, June 1966.

Note on Some Problems in Geophysical Data Acquisition on Magnetic Tape, J.Cl. DeBremaecker and G.A. Sitton, IEEE Trans. on Geoscience Electronics, Vol. GE-3, No. 1, June 1965, pp. 7-9.

Microseisms from Hurricane "Hilda", J.Cl. DeBremaecker, Science, June 25, 1965, Vol. 148, No. 367, pp. 1725-1727.

Love Waves and the Crust-Upper Mantle Structure of the Southwestern United States, Feb. 1968, Ph.D. Thesis by Chang, Andre C.

Long Period Leaking Modes, May 1969, PhD. Thesis by Michael D. Cochran.

Influence of Layer Parameters on Leaking Modes, May 1969, PhD. Thesis by Arthur F. Woeber.

Body Waves as Normal and Leaking Modes. Part 3. Pseudo-modes and Partial Derivatives on the (+-) Sheet, Michael D. Cochran, A.F. Woeber, and J.Cl. DeBremaecker. To be published in Reviews of Geophysics, 1970.

REPRINTS, PREPRINTS, PAPERS, AND THESES prepared with the aid of the Rice Computer.

Computer Analysis of Chronological Seriation, Frank Hole and Mary Shaw, Rice University Studies, Vol. 53, No. 3, Summer 1967.

Methods of Evaluating N-Dimensional Integrals with Polytope Bounds, W.G. Rudd, Z.W. Salsburg and L.M. Masinter, May 1969, AEC Report #ORO-2572-17.

Helix-Random Coil Phase Transitions in Polypeptide Systems with Random Defects: A Statistical Mechanical Model, Donald B. DuPre and Zevi W. Salsburgh, Biopolymers, Vol. 8, pp. 259-274 (1969).

Rigid Disks and Spheres at High Densities. III, W. G. Rudd, Z.W. Salsburg, and A.P. Yu, The Journal of Chemical Physics, Vol. 49, No. 11, 4857-4863, 1 December 1968.

Rigid Disks at High Density. II, Zevi W. Salsburg and W. G. Rudd, The Journal of Chemical Physics, Vol. 47, No. 11, 4534-4539, 1 December 1967.

Systematic Approximations to the Partition Function for Crystalline Solids, Adolph Beyerlein and Zevi W. Salsburg, The Journal of Chemical Physics, Vol. 47, No. 10, 3763-3771, 15 November 1967.

Hard-Sphere Solid: Pair Distribution Functions at High Density, Russell D. Larsen and Zevi W. Salsburg, The Journal of Chemical Physics, Vol. 47, No. 9, 3334-3340, 1 November 1967.

Elasticity in Rigid-Disk and—Sphere Crystals, Frank H. Stillinger, Jr., and Zevi W. Salsburg, The Journal of Chemical Physics, Vol. 46, No. 10, pp. 3962-3975, 15 May 1967.

Cell-Cluster Development for the Pair Distribution Function: Application to Rigid Disks at High Density, Russell D. Larsen and Zevi W. Salsburg, The Journal of Chemical Physics, Vol. 45, No. 11, 4190-4199, 1 December 1966. ORO-2572-5.

Voids in a Crystal Structure of Identical Spheres, Zevi W. Salsburg, Journal of Chemical Education, Vol. 43, No. 7, PP 353-357, July 1966.

A Modified Cell-Cluster Theory for the Solid State with Application to the Harmonic Model, Z.W. Salsburg, W. Rudd and Chemistry 420, Physica 32, 1601-1616, 1966.

Methods of Evaluating N-Dimensional Integrals with Polytope Bounds, W.G. Rudd, Z.W. Salsburg, and L.M. Masinter, Journal of Computational Physics, Vol. 5, No. 1, February 1970.

REPRINTS, PREPRINTS, PAPERS AND THESES prepared with the aid of the Rice Computer.

The Numerical Solution of Boundary-Layer Problems, D.D. Fussell and J.D. Hellums, A.I.C.H.E. Journal, Vol. 11, No. 4, July 1965.

A Study on Stability and Incipient Turbulence in Poiseuille and Plane-Poiseuille Flow by Numerical Finite-Difference simulation, T.N. Dixon and J.D. Hellums, A.I.Ch.E. JOURNAL, Vol. 13, No. 5, September 1967, Pages 866-872.

Simultaneous Heat and Mass Transfer in Laminar Free convection with A Moving Interface, D.V. Cardner and J.D. Hellums, I & EC Fundamentals, Vol. 6, Page 376-380, August 1967.

Laminar Gas Jet Impinging on an Infinite Liquid Surface, Estrella B. Fagela-Alabastro and F.D. Hellums, I & EC Fundamentals, Vol. 6, N November 1967, Page 580-587.

Numerical Solution of the Three-Dimensional Equations of Motion for Laminar Natural Convection, K. Aziz and J.D. Hellums, The Physics of Fluids, Vol. 10, No. 2, February, 1967, pp 314-324.

A Theoretical and Numerical Investigation of Laminar Boundary-Layer Heat and Mass Transfer in Natural Convection. I. Simultaneous Heat and Mass Transfer. II. Mass Transfer in the Absence of Heat Transfer. PhD. Thesis by David V. Cardner, May 1963.

Diffusion in Pulsating Flow in a Conduit, PhD. Thesis by Estrella B. Fagela-Alabastro. April 1967.

A Numerical Study of Cellular Convection, PhD. Thesis by Khalid Aziz, September 1965.

A Study of Stability and Incipient Turbulence in Poiseuille and Plane Poiseuille Flow by Numerical Finite Difference Simulation, PhD. Thesis by Thomas N. Dixon, April 1966.

Acoustic Segmentation of Speech, Master of Science Thesis by Gary Arthur Sitton, June 1969. ORO-2572-18.

Active Filters for Biological Signal Analysis, Master of Science Thesis by Robert John Scoff, May 1966. ORO-2572-3.

A Machine-Oriented Logic Incorporating the Equality Relation, PhD. Thesis by Elbert Ernest Sibert, Jr., May 1967. ORO-2572-12.

REPRINTS, PREPRINTS, PAPERS AND THESES prepared with the aid of the Rice Computer.

COGAP-42: Game Playing and Learning in a Non-Board, Imperfect Information Game, A Master of Science Thesis by Mary Sandra Carberry. May 1970.

Fault Detection in Linear Sequential Circuits, A Master of Science Thesis by Aleksa Petrovic, August 1969.

Waveform Analysis Using Digital Technique, a PhD. Thesis by Eliezer Gottlieb, October 1966.

Elements of BLM, J. K. Iliffe, Comp. J. Vol. 12, #3, Aug. 1969.

A Quantum Mechanical Calculation of the Helium-Helium Interaction Potential, a PhD. Thesis by Howard Davis Thames, Jr., May 1970.

"Fabrication and Switching Characteristics of Ferromagnetic Thin Films", James Kenneth Watson, May 1966, ORO-2572-2.

"Dynamically Allocatable Blocks in Programming Systems", Jane G. Jodeit, October 1965, ORO-2572-4.

Rapid Computation of the Energy Density Spectrum, Eliezer Gottlieb, Martin H. Graham, Roger M. Goldwyn, Communications of the ACM, January 1968, ORO-2572-6.

Rapid Evaluation of Integrals with Oscillatory Integrand, Eliezer Gottlieb, Martin H. Graham, Roger M. Goldwyn, Communications of the ACM, January 1968, ORO-2572-7.

"Tags for Description and Control", Jane G. Jodeit and Gary A. Sitton, February 1967, ORO-2572-9.

"A Direct Technique for Improving a Matrix Inverse", Gary A. Sitton, August 1966, ORO-2572-10.

"Eddy-Current-Free Switching of Permalloy Thin Films", J. K. Watson and H. C. Bourne, March 1967, ORO-2572-11.

"An English Spoken Digit Data Sampler", Pattern Recognition/Speech Time Series Report, H. L. Resnikoff and G. A. Sitton, June, 1967, ORO-2572-13.

"Linguistic Segmentation of Acoustic Speech Waveforms", H. L. Resnikoff and G. A. Sitton, May 1968, ORO-2572-15.

REPRINTS, PREPRINTS, PAPERS AND THESES prepared with the aid of the Rice Computer.

"Rice Computer-2 General Specifications", Staff of the Computer Project, June 1969, ORO-2575-19.

"Programming R1½", J. K. Iliffe, May 1969, ORO-2572-20.

"Assembler for Simulation of the New Rice Computer -AP1/R2-", E. O. Mutschler, June 1969, ORO-2572-21.

"Operations on Generalized Arrays with the Genie Compiler", G. A. Sitton, July 1969, ORO-2572-22.

"Hardware Aids to Classification of Data in Storage", Orvedahl, W., Iliffe, J.K., Rusk, S.K., and Sibert, E.E., June 1970, ORO-2572-24.

"Storage Control & Addressing for Complicated Data Structures", Orvedahl, W., Iliffe, J.K., Rusk, S.K., and Sibert, E.E., June 1970, ORO-2572-25.

"Automatic Stacking for a Computer with Explicit Addressing", Orvedahl, W., Iliffe, J.K., Rusk, S.K., and Sibert, E.E., June 1970, ORO-2572-26.

RICE UNIVERSITY

HOUSTON 1, TEXAS

COMPUTER PROJECT

January 15, 1965

REPRINTS, PREPRINTS, PAPERS, and THESES prepared with the aid of the Rice Computer. September 1960 - September 1964.

"The Rice Digital Seismograph System", J.Cl. DeBremaecker, G.A. Sitton, S.K. Rusk, M.H. Graham, and T.C. Schutz, Journal of Geophysical Research, Vol. 68, No. 17, September 1, 1963.

"Improvement in Inertial Seismograph", J.Cl. DeBremaecker, Proceedings of the IEEE, Vol. 51, No. 7, July 1963.

"Monte Carlo Calculations for the Two-Dimensional Triangular Lattice Gas: Supercritical Region", Dwayne A. Chesnut, The Journal of Chemical Physics, Vol. 39, No. 8, pp. 2081-2084, 15 October 1963.

"Theory of Multicomponent Fluid Mixtures", III. A Pseudo Pair Potential", Zevi W. Salsburg, The Journal of Chemical Physics, Vol. 36, No. 8, pp. 1974-1978, April 15, 1962.

"Monte Carlo Procedure for Statistical Mechanical Calculations in a Grand Canonical Ensemble of Lattice Systems", Dwayne A. Chesnut and Zevi W. Salsburg, The Journal of Chemical Physics, Vol. 38, No. 12, pp. 2861-2875, 15 June 1963.

"Diapole Moment of Nitrogen Dioxide", Jimmie A. Hodgeson, Ernest E. Sibert, and R.F. Curl, Jr., The Journal of Physical Chemistry 67, 2833 (1963).

"Microwave Spectrum of Chloride Dioxide, II. Analysis of Hyperfine Structure and the Spectrum of $Cl^{35}O^{16}O^{18}$ ", R.F. Curl, Jr., and Robert F. Heidelberg, The Physical Review, Vol. 125, No. 6, 1993-1999, March 15, 1962.

"Equilibrium Conformation of N-Methylene-methylamine from Microwave Data", James T. Yardley, Jürgen Hinze, and R.F. Curl, Jr., The Journal of Chemical Physics, Vol. 41, No. 8, 2562-2563, 15 October 1964.

"Microwave Spectrum of Methyl Isocyanate", R.F. Curl, Jr., V.M. Rao, K.V.L.N. Sastry and Jimmie A. Hodgeson, The Journal of Chemical Physics, Vol. 39, No. 12, 3335-3340, 15 December 1963.

"Microwave Spectrum of Vinyl Formate", V.M. Rao and R.F. Curl, Jr., The Journal of Chemical Physics, Vol. 40, No. 12, pp. 3688-3690, 15 June 1964.

"Microwave Spectrum of NO₂: Fine Structure and Magnetic Coupling", George R. Bird, James C. Baird, Albert W. Jache, Jimmie A. Hodgeson, R.F. Curl, Jr., Albert C. Kunkle, James W. Bransford, John Rastrup-Anderson, and Jack Rosenthal, The Journal of Chemical Physics, Vol. 40, No. 11, pp. 3378-3390, 1 June 1964.

"Microwave Spectrum of N-Methyl Methylenimine", K.V.L.N. Sastry and R.F. Curl, Jr., The Journal of Chemical Physics, Vol. 41, No. 1, pp. 77-80, 1 July 1964.

"Microwave Spectrum of Chlorine Dioxide. IV. Determination of Centrifugal Distortion Effects and Potential Constants", M.G. Krishna Pillai and R.F. Curl, Jr., The Journal of Chemical Physics, Vol. 37, No. 12, pp. 2921-2926, December 15, 1962.

"Microwave Spectrum of Chlorine Dioxide. V. The Stark and Zeeman Effects", W.M. Tolles, James L. Kinsey, R.F. Curl, and Robert F. Heidelberg, The Journal of Chemical Physics, Vol. 37, No. 5, pp. 927-930, September 1, 1962.

"Perturbation Velocities in Gas-Liquid Partition Chromatographic Columns", Fred I. Stalkup and H.A. Deans, A.I.Ch.E. Journal, Vol. 9, No. 1, pp. 106-108, January 1963.

"The Crystal Structures of Barium Chloride, Barium Bromide, and Barium Iodide", Elizabeth B. Brackett, Thomas E. Brackett, and Ronald Sass, The Journal of Physical Chemistry, 67, 2132 (1963).

"An X-Ray Diffraction Study of Nonplanar Carbanion Structure", Charles Bugg, Robert Desiderato, and Ronald Sass, The Journal of the American Chemical Society, 86, 3157 (1964).

"The Crystal Structure of Calcium Bromide", E.B. Brackett, T.E. Brackett, and R.L. Sass, Journal of Inorganic Nuclear Chemistry, 1963, Vol. 25, pp. 1295-1296. Pergamon Press.

"The Crystal Structure of Acrylic Acid, Mary Ann Higgs and Ronald L. Sass, ACTA Crystallographica, Vol. 16, Part 7, July 1963.

"The Crystal Structure of Strontium Bromide", Ronald Sass, Thomas Brackett, and Elizabeth Brackett, The Journal of Physical Chemistry, 67, 2862 (1963).

"Microseisms from Hurricane "Hilda"", J.Cl. DeBremaecker. Submitted for publication to Science.

"Deconvolution, Autoregression and Hilbert Transformation", J.Cl. De Bremaecker and G.A. Sitton, Submitted for publication to J. Geophys. Res.

"Limit Cycle Construction Using Liapunov Functions", Roger M. Goldwyn and Kenneth J. Cox. Submitted for publication to IEE-Professional Group on Automatic Control, September 15, 1964.

"The Crystal Structure of Pyridinium Dicyanomethylide, $C_8^{18}N_3$ ", Charles Bugg and Ronald L. Sass.

"cis,cis,cis-1,4,7-Cyclononatriene, A Non-Homoconjugated Six π -Electron System", W.W. Roth, W.B. Bang, P.Geobel, R.L.Sass, R.B. Turner, A.P. Yu.

"The Crystal Structure of Strontium Monohydrate", Maurice Dyke and Ronald L. Sass.

"A Monte Carlo Procedure for Statistical Mechanical Calculations in a Restricted Grand Cononical Ensemble of Lattice Systems", Dwayne A. Chesnut, Thesis (Title Page and Abstract), March 1963.

"A Mathematical Model for Relating EEG to Certain Stimulus Fields, Ashley James Welch; Thesis (Title Page and Abstract), May 1964.

"The Study of Numerical Methods for Solving the Laminar Boundary Layer Equations", Delbert D. Fussell, Thesis (Title Page and Abstract), November 1964.

"Transport Phenomena and Chemical Reaction Inside a Single Catalyst Pellet", Frederick Warren Miller, Thesis (Title Page and Abstract), October 1964.

"Determination of Thermal Properties of Porous Catalyst Particles", Efton L. Park, Jr., Thesis (Title Page and Abstract), August 1962.

"Attenuation Measurements in the Field", J. C. DeBremaecker, Richard H. Godson and Joel S. Watkins. (Draft).

"Detection of Small Arrivals", J. C. DeBremaecker, Bulletin of Seismograph Society of America, December 1964, B. (In Press).

"The Numerical Solution of Boundary Layer Problems", D.D. Fussell and J.D. Hellums.

"A Note on the Ohmura Method of Potential Deduction", William A. Pearce, Progress of Theoretical Physics, Vol. 32, No. 1, July 1964.