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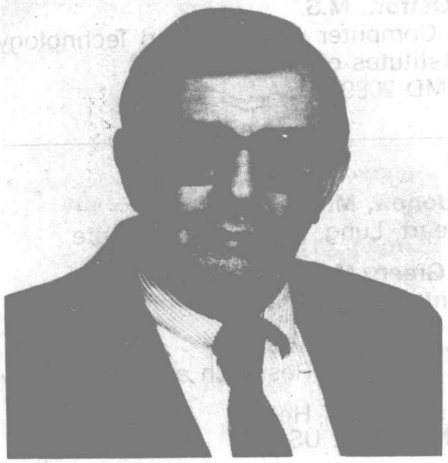

Floyd M. Nolle

(1938 - 1989)

Floyd Martin Nolle was born in March, 1938, in St. Charles, Missouri. He received his formal education at Washington University in St. Louis, where in 1972 he earned his doctorate in electrical engineering. He served as a research assistant and, later, research associate at the Biomedical Computer Laboratory of Washington University from 1964 until 1975. In 1975, he left to become assistant professor in the Department of Medicine and the Department of Computer Sciences at Northwestern University in Chicago. In 1977, he moved to Omaha, Nebraska, where he served as associate professor in the Department of Medicine of Creighton University until he died of cancer on June 11, 1989.

As a graduate student under the tutelage of Jerome R. Cox, former Co-Chairman of Computers-in-Cardiology, Floyd began working on PVC detection in the surface ECG. What many perceived to be a simple textbook detection problem masked a complicated challenge which would not be well-tamed for more than a decade and a half. For Floyd, it became his doctoral thesis and, in turn, his life's work.

By the late 1960's, Floyd had implemented a real-time ECG monitoring system, which was installed in the new coronary care unit of Barnes Hospital in St. Louis. The system was labeled the "Arrhythmia Guard System" or "Argus" after the ever watchful guardian in Greek mythology. The front-end data-reduction scheme, AZTEC, became the foundation of scores of commercial and research ECG analysis systems. Real-time Argus was soon commercialized by Mennen Greatbatch, now Mennen Medical. Floyd then began to apply Argus to Holter ECG's for which he developed a high-speed version, Argus/H, before leaving St. Louis in 1975. His legacy was both a research environment and methodology which allowed Argus application and development to flourish for another decade. A second-generation Argus/2H processed ECG recordings for NIH-sponsored multicenter trials and was used to help develop the American Heart Association Database for Ventricular Arrhythmias. A version was exported to the Thoraxcentrum of Erasmus University and to Dalhousie University. An improved St. Louis Argus was eventually commercialized.

After working with ambulatory ECG analysis systems in his later years at Washington University and at Northwestern, Floyd returned to real-time ECG analysis when he joined the Cardiac Center of Creighton University in 1977. As Director of Computer Monitoring Research & Development, Floyd designed and implemented CREI-GARD, a system which simultaneously monitors the ECG rhythms of 81 patients in three separate critical care units of St. Joseph Hospital in Omaha as well as patients in remote hospitals. This system is a new concept that provides the clinical staff with an arrhythmia monitoring service that is operated 24 hours a day by specially-trained technicians. In recent years, Floyd's research interests focused on the detection of ventricular fibrillation. When Floyd presented the evaluation results of his VF detector to this Conference, it was second nature for him to publish his algorithm so others could replicate it.

Floyd was very active in Computers-in-Cardiology; he contributed several papers and often served as workshop or session chairman. He also served as a consultant to the National Heart, Lung, and Blood Institute where he evaluated contract proposals, participated in site visits, served on the Clinical Trials Review Committee, helped plan the Workshop on Holter Monitoring Techniques, and contributed to the Workshop on Ambulatory ECG Monitoring. He was a member of IEEE, Tau Beta Pi, Sigma Xi, the American Association for the Advancement of Science, and the Association for the Advancement of Medical Instrumentation.

Those of us who worked with Floyd will miss his warm friendship and engaging humor. When caught up in a scientific discussion, his easy manner yielded to a passion for the experimental results. No concession to expediency could dissuade him from the path toward scientific truth and honesty. His achievements in rhythm monitoring stand in testimony to his scientific integrity.

This past year was difficult and painful for Floyd. He did not give up but kept working despite the setbacks. His optimism and good cheer transcended the hardships and gave us a glimpse of the courage that lay just beneath the surface.

Floyd is survived by his wife, Sandy; three children: Christopher, Cindy, and Gregory; and two brothers: Harold and Orville.

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Introduction

Computers in Cardiology 88 will be the fifteenth annual meeting of a series that began in 1974 in Bethesda, Maryland. It is significant that we have returned to the city of our original meeting and again are indebted to Dr. Arnold W. Pratt, Director of the Division of Computer Research and Technology of the National Institutes of Health. "Scotty" Pratt is truly the grandfather of Computers in Cardiology since he asked the provocative question, "Is there a forum where physicians, engineers, and computer scientists can discuss scientific problems in the area of computers in cardiology?" Paul Hugenholtz and Jerry Cox took over the role of cochairmen in the fledgling organizing committee for the 1974 meeting. We hope that Dr. Pratt is not too surprised that the organization has survived and prospered over the succeeding fifteen years.

As with the first meeting, this meeting is sponsored by the Division of Computer Research and Technology. Those of us on the organizing committee want to express our sincere thanks for their help, both ceremonial and financial, this year and over the years in between.

The program for Computers in Cardiology 88 is again an exciting one. New features include an industry forum entitled "Focus on Real-Time Solid-State Ambulatory ECG Arrhythmia Analyzers." Those of us who have attended each of the meetings of Computers in Cardiology have had the opportunity to observe the growth and now maturity of this important field, a field whose maturity can be judged by the strong interests that industry demonstrates by providing state-of-the-art systems for ambulatory arrhythmia analysis.

To give attendees a preview of future developments of interest to us all, Dr. John Watson and Dr. Alan Berson of the National Heart, Lung and Blood Institute have organized an invited session on cardiovascular technology. We are sure that all of you will be interested in the three talks that will cover exciting new research supported by NHLBI.

We send our congratulations to the local hosts. Beyond the excellent technical program, this return to Bethesda will be an occasion for much reminiscing for a few of us and an opportunity for many to visit our nation's capital, NIH and the once sleepy, but now thriving, city of Bethesda, Maryland.

Jerome R. Cox, Jr., Sc.D.
Jurgen Meyer, M.D.

Cochairmen, Computers in Cardiology

1988 Computers in Cardiology Conference
Washington, D.C.

Table of Contents

Plenary Session I
3-D Imaging 1
J.R. Cox, Jr. and J. Meyer

Ultrasonic Imaging of Arterial Structures Using 3D Solid Modelling 3
R.I. Kitney, L. Moura, K. Straughan, C.J. Burrell, M.T. Rothman and A.H. McDonald

Dynamic Display and Quantitative Analysis of Three-Dimensional Left Ventricular Pathology 7
W.A. Barrett and J.K. Udupa

3-D Quantitative Assessment of Coronary Luminal Morphology using Biplane Digital Angiography 13
R.O. Kenet, E.M. Herrold, G.J. Tearney, K.K. Wong, J.P. Hill and J.S. Borer

Three-Dimensional Echocardiographic Reconstruction and Geometric Analysis of the Human Mitral Valve 19
M.D. Handschumacher, A.J. Sanfilippo, P. Harrigan, A.E. Weyman and R.A. Levine

Computer-Generated 3D Ultrasound Images of the Carotid Artery 21
R.H. Selzer, P.L. Lee, J.Y. Lai, H.J. Frieden and D.H. Blankenhorn

Plenary Session II
NHLBI Supported Research in Cardiovascular Diagnostic and Therapeutic Instrumentation: Invited Papers on the State-of-the-Art 27
J.T. Watson

Implantable Microprocessor-Based Devices for the Management of Arrhythmia 29
R.C. Arzbaecher, T. Bump, K.L. Ripley, C.E. Yurkonis, J. Jenkins and K. Noh

Plenary Session III
Electrophysiological Mapping 35
R. Ideker and L. Fananapazir

Individualized Modeling of the Heart and Torso for Finite Element Method to Be Used in Forward Calculation of Body Surface Map 37
M. Okajima, K. Doniwa, T. Yamana, K. Ohta, N. Suzumura, A. Iwata and K. Kamiya

Multivariate Analysis of Body Surface Potential Maps in Left Ventricular Hypertrophy 43
F. Kornreich, T.J. Montague, P.M. Rautaharju, M. Kavadias and M.B. Horacek

Compression of Body Surface Potential Maps and Estimation of Their Dynamic Changes 49
D. Adam and S. Gilat

Computed Bipolar Electrograms from Unipolar Epicardial Recordings 55
S.M. Blanchard, W.M. Smith, W.C. Buhrman, R.E. Ideker and J.E. Lowe

Comparison of Electrophysiologic Data across Diverse Cardiac Geometries 61
S.L. Reiser, A.S.L. Tang, N.D. Danieley, R.E. Ideker and W.M. Smith

Session 1
3-D Imaging 65
S.L. Bacharach

Three-Dimensional Reconstruction of the Left Ventricle Using RP30A GSPECT 67
D. Sapoznikov, S. Rosenheck, D. Stone, S.H. Snyder, S. Yaffe, M.S. Gotsman and H. Atlan

Determination of Intra-Arterial Volumes from Biplane Coronary Angiography 71
N. Guggenheim, P.-A. Dorsaz, P.-A. Doriot, P. Descouts and W. Rutishauser

A Parallel-Processing Subsystem for Rapid 3-D Interpolation of CT Images 75
S.R. Cannon, S.J. Allan and W.A. Barrett

A Comparison of Two Analytical Systems for 3-D Reconstruction from Biplane Videoradiograms 79
G.T. Daughters, W.J. Sanders, D.C. Miller, A. Schwarzkopf, C.W. Mead and N.B. Ingels, Jr.

Session 2
Repolarization Studies 83
J.L. Willems

Quantitation of Ventricular Repolarization: A New Approach 85
M. Merri, M. Alberti, J. Benhorin, W.J. Hall, E. Locati and A.J. Moss

Real-Time Detection of Ischemic ECG Changes Using Quasi-Orthogonal Leads and Artificial Intelligence 89
J. Oates, B. Cellar, L. Bernstein, B.P. Bailey and S.B. Freedman

Frequency Response Characteristics of Ambulatory ECG Monitoring Systems and Their Influence on ST-Segment Performance 93
Th. Brüggemann, D. Andersen and R. Schröder

Clinical Evaluation of a Bedside ST-Segment Monitor 97
M.P. Burns and W.G. Downs

Session 3
Mathematical Modelling 101
M. Okajima

Adaptive and Sampled-Data Control of Blood Levels of Antiarrhythmic Drugs 103
J.L. Larsen, R.C. Arzbaecher, J.M. Jenkins, C.E. Yurkonis and T. Bump

Intraaortic Balloon Pumping During Low Cardiac Output: Validation of a Mathematical Model 107
W.J. Ohley, H.J. White, O. Lemaire and H. Gewirtz

A 3-Dimensional FEM Model of the Human Thoracic Cavity for Simulation of Impedance Cardiography 111
D.J. Peters and T.L. Rhyne

Session 4
Edge Detection 115
W.J. Sanders and R. Brennecke

Detecting Heart Wall Boundaries by Tracking Features in an Echocardiogram Sequence 117
C.-H.H. Chu and E.J. Delp

Improving Left Ventricular Border Recognition Using Probability Surfaces 121
R.E. van Bree, D.L. Pope and D.L. Parker

Automated Detection of Left Ventricular Boundaries for Thallium-201 Scintigrams 125
K.J. Cios, A. Sarieh and L.S. Goodenday

Real-Time Echocardiographic Noise Reduction, Border Extraction, and Velocity Derivation 129
J.D. Thomas, R.A. Higginbotham, A.M. Waxman, A.D. Popovic and A.E. Weyman

Local Myocardial Deformation Computed from Speckle Motion 133
J. Meunier, M. Bertrand, G.E. Mailloux and R. Petitclerc

Automated Endocardial Contour Detection in Short-Axis 2-D Echocardiograms; Methodology and Assessment of Variability 137
J.G. Bosch, J.H.C. Reiber, G. van Burken, J.J. Gerbrands, W.J. Gussenhoven, N. Bom and J.R.T.C. Roelandt

Session 5
Signal Processing 141
C. Marchesi and J.M. Jenkins

Sampling Frequency of the Electrocardiogram for Spectral Analysis of the Heart Rate Variability 143
M. Merri and E.L. Titlebaum

Assessment of Autonomic Regulation to Heart Rate Variability by the Method of Complex Demodulation 147
S. Shin, S.S. Reisman, W.N. Tapp and B.H. Natelson

Heartbeat Detection in a Microwave Monitor Using an Adaptive Least Squares Lattice Filter 151
P.A. Mahoney, E.A. Needham and M. Siegel

Electrocardiogram Signal Processing by Morphological Operators 153
C.-H.H. Chu and E.J. Delp

Session 6
Arrhythmia Analysis and Data Compression 157
K.L. Ripley and C. Zeelenberg

Arrhythmia Diagnosis Using Morphology and Timing from Atrial and Ventricular Leads 159
D. Lin, J.M. Jenkins, L.A. DiCarlo and R.S. MacDonald

Improved Arrhythmia Detection in Noisy ECGs Through the Use of Expert Systems 163
S.D. Greenwald, R.S. Patil and R.G. Mark

Evaluation of the "TRIM" ECG Data Compressor 167
G.B. Moody, R.G. Mark and A.L. Goldberger

ECG Data Compression for Ambulatory Device 171
C. Lamberti and P. Coccia

Multisource Comparative QRS-Wave Analysis of Premature Ventricular Beats and Monomorph Ventricular Tachycardia 175
W.A. Dijk, J.H. Kingma, H.J.G.M. Crijns, W. van der Velde, J.M. Verrostte and N.M. van Hemel

Session 7
Medical Decision Making 179
T.A. Pryor

Expert Advisor System for the Management of Interventions in Acute Myocardial Infarction 181
J.L. Elion

Differential Diagnosis Generation from a Causal Network with Probabilities 185
W.J. Long, S. Naimi, M.G. Criscitiello and G. Larsen

Factor Analysis Applied to Acute Myocardial Infarction 189
S.H. Brooks, S.L. Norris, M. deGuzman and L.J. Haywood

Representing Uncertainties in a Diagnostic Expert System for Coronary Arterial Stenosis 193
K.J. Cios, R.E. Freasier and L.S. Goodenday

An Expert System for Thrombolysis in Acute Myocardial Infarction (ADMIT) 197
E.L. Alderman and A. Rappaport

Session 8
Myocardial Perfusion 201
R.O. Bonow

Automated Analysis of Contrast Echocardiographic Time-Intensity Curves to Predict Myocardial Perfusion 203
C. Boyle, R. Saleh, A. Kemper, D. Nickerson and A. Parisi

Computerized Analysis of the Transmural Distribution of Myocardial Echo-Contrast Effect 207
E.M. Ferdeghini, D. Rovai, M. Lombardi, A. Benassi and A. L'Abbate

Computerized Radio-Frequency Analysis of Concentration and "Decay" of Echo-Contrast Agents 211
G. De Pieri, D. Rovai, A. Mazzarisi, L. Landini, M. Lombardi, A. Distante, L. Taddei, A. Benassi and A. L'Abbate

The Accuracy of Densitometric Time Parameters in the Analysis of Myocardial Perfusion 215
G.J.H. Uijen, N.H.J. Pijls, A. Hoevelaken and T. van der Werf

Arterial Blood Concentration Curves by Cardiac PET without Arterial Sampling or Image Reconstruction 219
S.L. Bacharach, A. Cuocolo, R.O. Bonow, R.E. Carson, E.F. Unger C. Sheffield, R. Finn, S. Stein, P. Herscovitch and M.V. Green

Session 9
Stress Electrocardiography 221
R. Degani

A Knowledge Base Controlled Signal Processing and Scoring System for the Exercise ECG 223
R. Liang, T.A. Pryor and F. Yanowitz

Computer ST Segment Measurement during Transesophageal Atrial Pacing Stress 227
H. Jadvar, J. Jenkins and R.C. Arzbaecher

Comparison of Excercise Algorithms for Diagnosis of Coronary Artery Disease 231
J.W. Deckers, B.J. Rensing, R.V.H. Vinke and M.L. Simoons

Session 10
Modelling of Arrhythmia Mechanisms 235
R.J. Cohen

Multiple Oscillatory and Steady State Solutions in an Excitable Cardiac Cell Model 237
M. Landau and P. Lorente

Hysteresis Phenomena in Excitable Cardiac Cells Analyzed by a Microcomputer System 241
P. Lorente, C. Delgado, M. Delmar, D. Henzel and J. Jalife

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Model Studies of Infarct Zone Epicardial Electrograms 245
D.B. Geselowitz and E.J. Berbari

Entrainment in Modulated Parasystole 249
C.A. Swenne

Session 11
Nuclear Cardiology 253
M.V. Green and D.F. Vitale

Improved Radionuclide Ventricular Volume Analysis using a Computerised Non-Homogeneous Torso Model 255
G.E. Haloutsos, J.M. Beattie, J.P. Fox, P.J. Roberts, W.A. Littler and R.G. Murray

Parallel Distributed Processing as a Decision Support Approach in the Analysis of Thallium-201 Scintigrams 259
G. Porenta, G. Dorffner, J. Schedlmayer and H. Sochor

ART3H Reconstruction of 7-Pinhole Tomographic Myocardial Perfusion Imaging in the Evaluation of Coronary Angioplasty 263
J.H.Z. Bánki, P.P. van Rijk, J.W. van Giessen, A. van Dongen, E.O. Robles de Medina and C.A. Ascoop

Nonparametric Comparison of Two Tests of Cardiac Function on the Same Patient Population Using the Entire ROC Curve 267
G. Campbell, M.A. Douglas and J.J. Bailey

Diffuse Coronary Atheromatosis and Sensitivity/Specificity to Detect Coronary Stenosis by Exercise Thallium-201 Scintigraphy 271
C.-G. Ericsson, U. de Faire, A. Hamsten, L. Mesko, A. Szamosi, S. Zetterquist and L. Erhardt

Session 12
Left Ventricular Wall Motion 275
R.O. Cannon III

Measurement of End Diastolic Shape Deformity Using Bending Energy 277
J.S. Duncan, A. Smeulders, F. Lee and B.L. Zaret

Physiologically Based Non-Linear Segmentation of LV Borders 281
J. Sitomer, M.T. LeFree, S.F. Deboe, S.B. Simon, E.G. Anselmo, P.R. Williamson, S.J. Kalbfleisch and G.B.J. Mancini

An Algorithm for Coronary Artery Shortening Applied to the Assessment of Regional Wall Motion During Coronary Angioplasty 285
R.A. Perry, P.F. Wankling, A. Seth, A.C. Hunt, F. Westwood, S.C.H. Smith, J.A. Newell and M.F. Shiu

Optical Flow Restoration of X-Ray Images of the Heart Using the Theory of Convex Projections 289
G.E. Mailloux and M. Bertrand

Computational Geometry of Heart Surfaces 293
G. Coppini, M. Demi, A. L'Abbate and G. Valli

Session 13
Heart Rate Variability 297
R.I. Kitney and G.B. Moody

Nonlinear Interactions between Respiration and Heart Rate: Classical Physiology or Entrained Nonlinear Oscillators 299
J.P. Saul, D.T. Kaplan and R.I. Kitney

A Study of Non Stationary Phenomena of HRV During 24-Hour ECG Ambulatory Monotoring 303
F. Kauffmann, P. Maison-Blanche, B. Cauchemez, J. Deschamps, J. Clairambault, P. Coumel, J. Henry and M. Sorine

Use of a Phase-Locked Loop to Correct Heart Rate Variability Artifacts in Data from Human Cardiac Transplant Recipients 307
M.L. Appel and R.J. Cohen

Estimation of Heart Rate Power Spectrum Bands from Real-World Data: Dealing with Ectopic Beats and Noisy Data 311
P. Albrecht and R.J. Cohen

Circadian Changes of Heart Rate Variability 315
Y. Ichimaru, Y. Kodama and T. Yanaga

HRV during Exercise in Sedentary Subjects and Athletes 319
G. Baselli, S. Cerutti, T. Interdonato, C. Orizio, R. Perini, and A. Veicsteinas

Session 14
Detection of Ventricular Fibrillation 323
R.C. Arzbaecher and A.E. Aubert

Detection of Ventricular Fibrillation by Sequential Testing 325
Y.-S. Zhu and N.V. Thakor

Coherence Measures of Cardiac Arrhythmias from Intra-Cardiac and Epicardial Leads 329
A.V. Sahakian, K. Ropella, J. Baerman and S. Swiryn

Relation among Power Spectrum, Refactory Period and Conduction Time during Ventricular Fibrillation 333
M.T. Arredondo, G. Martin, S. Guillén, M. Such and A. Quesada

Evaluation of a Frequency-Domain Algorithn to Detect Ventricular Fibrillation in the Surface Electrocardiogram 337
F.M. Nolle, R.W. Bowser, F.K. Badura, J.M. Catlett, R.R. Gudapati, T.T. Hee, A.N. Mooss and M.H. Sketch, Sr.

Recognition of Ventricular Fibrillation and Tachycardia from Electrogram Analysis 341
A.E. Aubert, B.N. Goldreyer, M.G. Wyman, H. Ector and H. De Geest

Session 15
Vessel Measurement 345
G.D. Walford

Automated Morphometric Analysis of Coronary Artery Lesions: An Extension of Quantitative Coronary Arteriography 347
S.B. Simon, M.T. LeFree, M.J. McGillem, S.J. Kalbfleisch, E.G. Anselmo, J. Sitomer, S.F. DeBoe, S. Ellis and G.B.J. Mancini

Derivative-Based Edge Detection in Quantitative Coronary Angiography Is Not Independent of Vessel Size 351
D.M. Herrington, M. Siebes, G.D. Walford and R.H. Selzer

Optical Distortion Due to Geomagnetism in Quantitative Angiography 355
U. Solzbach, H. Wollschläger, A. Zeiher and H. Just

Spatial Orientation of Segments of the Coronary Arteries Evaluated from 100 Coronary Angiograms 359
U. Solzbach, H. Wollschläger, A. Zeiher, B. Willer, A. Philipp and H. Just

Effects of Cardiac Phase on Diameter Measurements from Coronary Cineangiograms 363
R.H. Selzer, M. Siebes, C. Hagerty, S.P. Azen, P.L. Lee, D.H. Blankenhorn and A. Shircore

Session 16
Late Potentials 367
M.E. Cain

A Cardiac Mapping System for Identifying Late Potentials: Correlation with Signal Averaged Surface Recordings 369
E.J. Berbari, P. Lander and D.B. Geselowitz

Spectral Analysis of the Entire Cardiac Cycle from Signal-Averaged ECGs for the Detection of Patients Prone to Ventricular Tachycardia 373
H.D. Ambos, J. Markham, S.M. Moore and M.E. Cain

Signal Averaging of Ventricular Late Potentials using Holter Recordings 377
P. Lander, J.S. Steinberg, J.T. Bigger, Jr. and E.J. Berbari

Session 17
Ventricular Fibrillation 381
D.R. Adam and S.M. Blanchard

Directional Varability of Cardiac Fibres Stimulation Threshold: Relationship with Orthogonal Defibrillation Shocks 383
A. Bardou, J. Degonde, J.M. Chesnais, P.J. Birkui and P. Auger

Computer Simulation of Ventricular Fibrillation and of Defibrillating Electric Shocks 387
P.M. Auger, A.L. Bardou, A. Coulombe and J.M. Chesnais

Computer Generation of Fibrillation in a 3-Dimensional Model of Heart 391
N.V. Thakor and L.N. Eisenman

Three Dimensional Finite Element Model of Electric Fields in Internal Defibrillation 395
N. Thakor, K. Kothiyal, R. Shankar and L. Fogelson

A Model of the Heart's Conduction System Using a Self-Similar (Fractal) Structure 399
D. Eylon, D. Sadeh, Y. Kantor and S. Abboud

Refractory Period Dynamics and Cardiac Stability: Results from a Computer Model 403
D.T. Kaplan and R.J. Cohen

Poster Session 407

A Novel Quadrature Interference Subtraction Technique in ECG Noise Reduction 409
H. Köymen, Y.Z. Ider, G. Hizarci, F. Kücükdeveci, F. Tüzün and I. Yaylali

The Pseudo-Inverse Solution: Attenuation Compensated Body Surface Potential Maps 413
D.M. Monro, S.W. Edwards and D.L. Wilson

Digital Angiography: An Open-System Dedicated to Left Ventricular Function Studies 417
C. van Eyll, O. Gurne, M.F. Rousseau, J. Etienne, A.A. Charlier and H. Pouleur

Some Results on a Fractal-Like Behavior of ECG Signals 421
A. Casaleggio, S. Pestelli, G.S. Mela and S. Ridella

Complex Irregular Dynamics in a Computer Model of Vagal Control of the Cardial Pacemaker 425
D.C. Michaels, D.R. Chialvo and J. Jalife

Left Ventricular Analysis from Cardiac Images Using Deformable Models 427
L.H. Staib and J.S. Duncan

Improved Personal Computer-Based System Supports Qualitative and Quantitative Applications of 3D Body Surface Precordial Maps 431
F.J.S. Almeida, N.F.S. Especial, A.C. Da Cunha, J.A. Comprido, J.C.R.L. Fernandes, A.M. Aleixo, V. Gil and R. Seabra-Gomes

A Portable and Simple Microcomputer System for Quantitative Assessment of Cardiovascular Therapy in Critical Patients 435
S.G. Lage, M.A. Gutierrez, M.C. Monachini, C.P. Melo, G. Bellotti and F. Pileggi

A Computerized System to Measure Intracellular Enzymes in Cardiac Muscular Fibers 439
C.A. Pasqualucci, S.G. Lage, N. Macha and F. Pileggi

Performance Evaluation of Algorithms for Late Potentials Detection: A Simulated Study 443
G. Pinna, G. Orsi, M. Mingon, A. Tangenti and E. Traversi

An MR Workstation for Quantitative Analysis of Cardiac Images 445
L.T. Andrews, P.T. Tam, R.F. Leighton, G. Williams, W.J. Potvin, R.A. Brinker and J.W. Klingler

Synthesis of the 12 Lead Electrocardiogram from a 3 Lead Semi-Orthogonal Subset Using Patient-Specific Linear Transformation Arrays 449
J.A. Scherer and J.M. Nicklas

Automatic Detection of Echocardiographic LV-Contours: A New Image Enhancement and Sequential Tracking Method 453
A.P. Monteiro, J.P. Marques de Sá and C. Abreu-Lima

Using Hypermedia to Teach Cardiovascular Imaging: A Prototype System Based on Hypercard 457
J.W. Klingler, R.F. Leighton and L.T. Andrews

Dynamic Frequency Spectrum Analysis: Application in Organized and Disorganized Electrocardiographic Signals 461
P.-W. Hsia, S.R. Jolly and R. Mahmud

Electrocardiographic Data Compression Using Preceding Consecutive QRS Information 465
P.-W. Hsia

A Workstation Network for Cardiac Electrophysiology 469
N.D. Danieley, P.D. Wolf, R.E. Ideker and W.M. Smith

A Technological Environment and A Software Product for Teaching Dynamic Electrocardiography 473
F. Pinciroli, V. Castelli and G. Mosca

A Respiration-Related EKG Database 477
F. Pinciroli, G. Pozzi, R. Rossi, M. Piovosi, A. Capo, R. Olivieri and M. Della Torre

Improved Alignment Methods in ECG Signal Averaging: Application to Late Potentials Detection 481
R. Jané, P. Caminal, H. Rix, E. Thierry and P. Laguna

Non-Invasive Determination of Cardiac Output by Transesophageal Doppler Ultrasound: Clinical Application and Validation 485
M. Haude, Th. Gerber, R. Brennecke, R. Erbel and J. Meyer

ARCA: Integrated System for Cardiac Pathologies Diagnosis and Therapy 489
E. Oliveira, J. Rocha, C. Abreu-Lima and J.P. Marques de Sá

Comparison of Two Methods for Removing Baseline Wander in the ECG 493
J.R. Gradwohl, E.W. Pottala, M.R. Horton and J.J. Bailey

Steps to a Fully Computerized Cardiac Catheterization Laboratory 497
D.G.W. Onnasch and P.H. Heintzen

A Computer System for the Analysis of Left Ventricular Pressure and Volume 501
L.P. van der Linden, W.A. Goos and C.A. Swenne

Image Selection for Volume Calculations in Digital Ventriculography 505
J.-E. Angelhed

Framework for a Comprehensive Method of Evaluating Heart Rate and Arrhythmia Monitors 509
R.M. Armington and W.R. Crosby

Left Ventricular Aneurysmectomy and Jatene Ventriculoplasty: Early Functional and Morphological Results 513
C. Vassanelli, G. Morando, M. Turri, G. Menegatti, G. Besa and P. Zardini

Arrhythmias Diagnostic Expert System in Veterans General Hospital, Taipei 517
C.-Y. Chen, S.-R. Chen, T. Kao and B.C. Yu

Knowledge-Based Method for Quantification of Doppler Spectral Data 521
S.M. Lobodzinski, T. Loevenskiold, L.E. Ginzton and M.M. Laks

Knowledge Engineering in Cardiology: The Importance of the Human Expert 523
W.R.M. Dassen, P. Brugada, J.R.L.M. Smeets, P. Torner, R. Mulleneers and H.J.J. Wellens

Computer Simulation of Reentry Tachycardias 527
M.J.S. Begemann, W. Dassen and K. den Dulk

Implementation of a Computerized Nuclear Cardiology Database on the Veterans Administration Fileman System 531
F.C. Robinson, D.W. Lum, A. Beyoglu, A.J. Robinson-White, J.J. Smith and R.D. Fletcher

Design of Integrated DSP Solutions for Cardiologic Problems Using Revolutionary VLSI Methodologies 535
H. Vandenbogaerde, J. Verbeke, J. Vanneuville, A. Sinnaeve, A.E. Aubert and H. De Geest

CADANS: Design and Implementation of a Data Network for Cardiology: A Progress Report 539
G.T. Meester, O.E. Sartorius, D. Fanggidaej, F. van Rappard, P.C. Lauret, E. vd Berge, M.G. Gerritsen and J.v. Kester

A Computer PC Solution for the Electrophysiology Laboratory 541
A.J. van der Steld, L.R.B. Dohmen, J. Smeets, P. Brugada and H.J.J. Wellens

A Quantitative Cardiac Angiography System for Use in a Clinical Trial 543
W. Sanders, B. Hollak, M. Stadius and E. Alderman

An Automated Video Image Analysis for Detection and Tracking Implanted Myocardial Markers 547
A. Macerata, W.J. Sanders, E.L. Alderman and D.C. Miller

A Fuzzy Pattern Matching Technique for Diagnostic ECG Classification 551
G. Bortolan, R. Degani and W. Pedrycz

Beat-to-Beat Spectral Analysis of Epicardial Electrogram Under Acute Ischemia in Dogs 555
V. Mor-Avi, B. Shargorodsky and S. Akselrod

Detection of Ventricular Fibrillation and Ventricular Tachycardia from the Surface Lead Electrocardiogram 559
S.H. Meij, C. Zeelenberg and A. Algra

Industry Forum
Focus on Real-Time Solid-State Ambulatory ECG Arrhythmia Analyzers 561
K.M. Kempner and R.G. Mark

Frequency Response Characteristics of Digital Ambulatory ECG Recording Systems as Compared to Tape Based Ambulatory ECG Recording Systems as Required for ST Segment Analysis 563
J.H. Brown and S. Halpin

The Evolution of Compas Algorithm Development for Arrhythmia and ST Segment Analysis 565
J.M. Carson, Jr.

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