A BIBLIOGRAPHY OF AMERICAN PUBLICATIONS ON STOCHASTIC PROCESSES AND TIME SERIES ANALYSIS PUBLISHED IN THE YEARS 1900-1959

Preliminary Report

AMSL

Prepared By
EMANUEL PARZEN AND GEORGE R. HEXT

TECHNICAL REPORT NO. 2
August 24, 1961

PREPARED UNDER THE AUSPICES OF NATIONAL SCIENCE FOUNDATION GRANT 14336
A BIBLIOGRAPHY OF AMERICAN PUBLICATIONS
ON STOCHASTIC PROCESSES AND TIME SERIES ANALYSIS
PUBLISHED IN THE YEARS 1900-1959
(Preliminary Report)

PREPARED BY
EMANUEL PARZEN and GEORGE R. HEXT

TECHNICAL REPORT NO. 2
August 24, 1961

PREPARED UNDER THE AUSPICES
OF
NATIONAL SCIENCE FOUNDATION GRANT 14336

APPLIED MATHEMATICS AND STATISTICS LABORATORIES
STANFORD UNIVERSITY
STANFORD, CALIFORNIA
A Bibliography of American Publications on Stochastic Processes and Time Series Analysis Published in the Years 1900-1959
(Preliminary Report)
Prepared under the direction of Emanuel Parzen and George R. Hext

1. PURPOSE OF THE BIBLIOGRAPHY

The International Statistical Institute has organized an international panel, under the direction of Professor Herman Wold of Uppsala, Sweden, to prepare and publish a bibliography on Time Series and Stochastic Processes which is to list and classify books and papers published, in the years 1900-1959, on both theory and applications. The members of the Time Series Project at Stanford University, supported by a grant from the National Science Foundation, agreed to prepare the bibliography of work published in the United States of America to be incorporated in the international bibliography.

The I.S.I. Bibliography is intended to cover (1) the theory of stochastic processes and time series analysis, (2) applied work in behavioral sciences, (3) applied work in other sciences, containing a complete list of published works in areas 1 and 2, and a representative list in area 3. The assignment of our project was to provide a complete listing of papers and books published by American publishers during 1900-1959 in area 1, and a representative listing of papers and books published by American publishers in area 3. We are circulating this report of our work at the same time that it is being sent to Uppsala for inclusion in the international bibliography in the hope that readers will help us rectify any errors of omission or commission.
IT WOULD BE VERY MUCH APPRECIATED IF RECIPIENTS WOULD CHECK THE ENTRIES CONCERNING THEMSELVES AND THEIR COLLEAGUES FOR COMPLETENESS AND ACCURACY. Any corrections or additions should be sent to

Professor Emanuel Parzen
Department of Statistics
Stanford University
Stanford, California

2. CONTENTS OF THE BIBLIOGRAPHY

The entries in the bibliography are listed in alphabetical order by author. Each entry contains the following information:

- Code specification (which approximately indicates the content and nature of the entry; the notation used in the code is explained in the next section)
- Authors name
- Year of publication
- Title of the publication
- Location of the publication (for articles in periodicals, the name of the periodical, volume number, and page numbers; for books, publisher, place, and number of pages).

Entries with more than one author are denoted by an asterisk following the code specification.

3. DESCRIPTION OF THE CODE

The code gives six pieces of information.

Code 1. Type of process.
Code 2. Scientific nature of the entry.


Code 5. Field of application.


Codes 1, 3 and 5 are in numbers, whereas codes 2, 4 and 6 are in letters.

An asterisk follows code 6 if the entry has more than one author.

The entries within each code are made in accordance with the following rules of classification set up by the planning group of the I.S.I. Bibliography Project:

Code 1. Type of process.

The code has 9 fundamental classes indicated by a first number 1-9. Each of the nine classes has subclasses indicated by a second number, in some cases also by a third number.

The numbers for classes and subclasses are as follows:

1: General.

11: Comprehensive treatment of several types of process.
12: The general theory of stochastic processes, random functions, and of processes more general than classes 2-8.
13: Processes of order 2.
14: Gaussian processes.

2: Sequences and sums of independent variables, and their generalizations.

21: Independent summands.
22: Processes with independent or orthogonal increments.
23: Martingales.

3: Markov processes.

31: Discrete time.
    312: Discrete time; continuous space variable.
32: Continuous time.
    321: Continuous time; discrete space variable.
    322: Continuous time; continuous space variable.

4: Stationary processes.

41: Discrete time.
42: Continuous time.
Third number to specify type of process:

412 or 422: Yule process.
413 or 423: Slutsky process.

5: Processes with discrete occurrence of events.

51: Poisson and other point processes.
52: Branching processes and related processes.

6: Stochastic functions of several variables.

61: General.
62: Sequences and sums.
63: Markov processes.
64: Stationary processes.
65: Point processes.

7: Vacant class.

8: Time series analysis without stochastic specification.

9: Miscellaneous.

Code 2. Scientific nature of the entry.

This information carried by a capital letter, as follows:

A: Research paper
B: Expository paper
C: Monograph
D: Text-book


Most entries will carry numbers for both of the codes 1 and 3. If an entry belongs to three or more classes of code 1, this code drops out, and the code specification begins by code 2. All entries carry code 3.

Code 3 contains three main classes. Each with several subclasses, as follows.

1. Process properties.

10: Basic theory. Canonical representations.
11: Classical limit theorems.
12: Renewal, recurrence and passage time problems.
13: Diffusion problems, including random walks.
15: Prediction problems.
16: Queueing problems. Storage problems.
17: Information theory. Communication theory.
18: Ergodic theory.
19: Stochastic models for specific distributions.


20: General theory of statistical inference.
21: Correlation methods.
22: Regression methods.
23: Trends, their analysis and elimination.
24: Seasonal variation. The search for periodicities.
25: Surveying problems.
26: Sequential procedures.


30: General.
31: Random numbers and other Monte Carlo material.
32: Monte Carlo methods.
33: Adaptation for computing machines.


Code 4 has five classes, as follows:

0: No applications are indicated or developed.
1: Applications are indicated or developed, but not performed on the basis of statistical data.
2: Applications are performed on the basis of empirical data.
3: " " " " " of artificial data.
4: " " " " " both on empirical and artificial data.

Code 5. Field of application.

Fields which the bibliography will cover by way of an orientation:

1  Physics
2  Mechanics
3  Astronomy
4  Geophysics
5  Meteorology, Oceanography
6  Automatic control
7  Electrical and radio engineering
8  Other technological and industrial applications
9  Chemistry
10 Biology
11 Genetics
12 Medicine
13 Miscellaneous
Code 6: Language.

The Language of the entry is to be indicated by the first letters of the language, as follows:

En = English, Ru = Russian, Fr = French, Ge = German, Hu = Hungarian, Por = Portuguese, ...

4. LIST OF JOURNALS SEARCHED

Most of the entries given were obtained in the course of searching systematically the following 29 journals:

Annals of Mathematical Statistics
Journal of American Statistical Association
Transactions American Mathematical Society
Proceedings American Mathematical Society
Bulletin American Mathematical Society
Annals Mathematics
Duke Mathematics Journal
Pacific Journal Mathematics
Proceedings National Academy Science
Bell System Technical Journal
Proceedings IRE (Institute of Radio Engineers)
Proceedings PGIT (Professional Group on Information Theory, IRE)
Review of Modern Physics
Physical Review
Astrophysical Journal
Proceedings of Berkeley Symposium on Math Stat and Probability Theory
Journal National Bureau of Standards
Journal Society for Industrial and Applied Mathematics
Biometrics
Journal Operations Research Society
Quarterly Applied Mathematics
Journal Chemical Physics
Journal Acoustical Society
Journal Applied Physics
Journal Mathematics and Physics
American Journal Mathematics
Annals Mathematics Studies
Bulletin Mathematical Biophysics
Journal of Genetics
Journal of Mathematics and Mechanics

Entries in this bibliography which are not in papers appearing in the foregoing journals were mainly obtained from responses to letters of inquiry that were sent out to various researchers asking for lists of their publications in the fields of stochastic processes and time series analysis.

Since the index was prepared, a few additional papers have come to our notice. For each of these papers, the correct place in the bibliography is shown by the symbol (***) (***); the full description of the paper is given on a separate page following the regular list for authors of the given initial letter.


Additional Publications: A


Baten, W. D. (1930) The evaluation of certain definite integrals by the use of probability functions. 


Blum, J. R. and Rosenblatt, M. (1956) A class of
stationary processes and a central limit theorem.


Blum, J. R. and Rosenblatt, M. (1957) A class of
stationary processes and a central limit theorem.

Blum, J. R., Chernoff, H., Rosenblatt, M. and Teicher,
H. (1958) Central limit theorems for interchan-
229.


Blumenthal, R. M., Chacon, R. V. and Austin, D. G.
(1958) On the continuity of transition functions.

asymptotic distribution of the eigenvalues for
a class of Markov operators. Pacific Jour.
Math., 9, 399-408.


Additional Publications:  B


9 A 20 p 7 En* Bloemsma, J. and Burch, C. R. (1925) An application of the periodogram to wireless telegraphy. Phil. Mag., Ser. 6, 49, 480-503.


8 C 24 p 4 En* Bartels, J. and Chapman, S. (1940) Ch. 16 (pp. 545-605), Periodicities and harmonic analysis in geophysics. From "Geomagnetism," Oxford Univ. Press.


<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Author(s)</th>
<th>Title</th>
<th>Journal/Publisher</th>
</tr>
</thead>
</table>


Chapman, S. and Bartels, J. (1940) Ch. 16 (pp. 545-605), Periodicities and harmonic analysis in geophysics. From "Geomagnetism," Oxford Univ. Press.


First Berkeley Sym., 303-343.

***  ***  ***  ***


32 A 12 o - En  Doob, J. L. (1948) Renewal theory from the point of view of the probability theory.  

***  ***  ***  ***

23 A 10 o - En  Doob, J. L. (1951) Continuous parameter martingales.  
Second Berkeley Sym., 269-277.


<table>
<thead>
<tr>
<th>Page</th>
<th>Entry</th>
<th>Reference</th>
</tr>
</thead>
</table>
Additional Publications:  D


1 B 1 o - En  Doob, J. L. (1942) What is a stochastic process?

1 A 10 o - En  Doob, J. L. (1947) Probability in function space.

First Berkeley Sym., 303-343.


Epstein, B. (1951) Correction to "The distribution of extreme values in samples whose members are subject to a Markoff chain condition." *Ann. Math. Statist.*, 22, 133-134.


Eyring, H., Giddings, J. C. and Tensemeyer, L. G.

<table>
<thead>
<tr>
<th>Source</th>
<th>Reference</th>
</tr>
</thead>
</table>


Additional Publications: F


***


Markov chains. *Teoriya Veroiatnostei i ee
Primeneniya*, 4.

Goodman, T. P. (1956) Technique for approximate

Goodrich, F. C. (1954) Random walk with semiadsorbing

Granger, C. W. J. (1957) A statistical model for
sunspot activity. *Astrophysical Jour.*, 126, 152-
158.

Grass, A. and Gibbs, F. (1947) Frequency analysis of

Green, D. M. (1958) Detection of multiple component

Green, D. M., Swets, J. A., Shipley, E. F. and McKey,
M. J. (1959) Multiple observations of signals in

Green, D. M., McKey, M. J. and Licklider, J. C. R.
(1959) Detection of a pulsed sinusoid in noise.


***

79


Additional Publications: G


<table>
<thead>
<tr>
<th>Reference</th>
<th>Page</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hall, L. W. (1924)</td>
<td>9 A 23,24 x 20 En</td>
<td>Seasonal variation as a relative of secular trend. Jour. Amer. Statist. Assoc., 19, 156-166.</td>
</tr>
</tbody>
</table>


8 A 24 y 20 En Hart, W. L. (1922) The method of monthly means for
determination of a seasonal variation. Jour.
Amer. Statist. Assoc., 18, 341-349.


Mean motions and distribution functions. Amer.

Asymptotic distributions and statistical inde-

9 A - - - En Hartman, P. (1940) On Dirichlet series involving ran-
dom coefficients. Amer. Jour. Math., 61, 955-
964.

9 A 18 o - En* Hartman, P. and Wintner, A. (1940) Asymptotic dis-
tributions and the ergodic theorem. Amer. Jour.
Math., 61, 977-984.

independence and statistical equilibrium. Amer.

21 A 11 o - En Hartman, P. (1941) Normal distribution functions and
the law of iterated logarithm. Amer. Jour. Math.,
63, 584-588.

21 A 11 o - En* Hartman, P. and Wintner, A. (1941) On the law of the
iterated logarithm. Amer. Jour. Math., 63, 169-
176.
9 D 24 x 20 En  Harwood, E. C. (1932) Causes and control of the
   business cycle. Financial Publishing Company,
   Assoc., 28 (1933), 253-254.

8 A 17,22 p 6,7 En  Hauser, A. A., Jr. (1954) Geometric aspects of

   additive distribution functions. Amer. Jour.

   for a queue with preemptive priorities. Jour.

   Soc., 8, 630-638.


31 A 13 o 9 En*  Hermans, J. J., Klamkin, M. S. and Ullman, R. (1952)
   The excluded volume of polymer chains. Jour.

9 D 24 x 20 Fr  Hersch, L. (1935) Essai sur les variations periodiques et leur mensuration. "Metron" Library, B,
   Statist. Assoc., 32 (1937), 219-220.
Hickman, C. N. (1934) An acoustic spectrometer. 

Hille, E. (1949) On the integration problem for 
Fokker-Planck's equation in the theory of stochastic processes. 
Den 11 skandinaviske matematikerkongress, 183-194.

Comptes rendus des séances de l'Académie des 
Sciences, 230, 34-35.

Hille, E. (1950) "Explosive" solutions of Fokker-Planck's equation. 

Hille, E. (1953) Quelques remarques sur les équations 
de Kolmogoroff. Bulletin de la Société de 
Mathématiciens et Physiciens de la R. P. de Serbie, 
5, 3-14.

Hille, E. (1953) The abstract Cauchy problem and 
Cauchy's problem for parabolic differential 
equations. Journal d'Analyse Mathématique, Jeru-
salem, 3, 81-196.

Rendiconti del Seminario Matematico, Torino, 13, 
169-184.

Hille, E. (1954) On the integration of Kolmogoroff's 
40, 20-25.

Hille, E. (1954) Perturbation methods in the study 
9 A 10 c 13 Fr
Hille, E. (1958) Remarques sur les systèmes des
equations différentielles linéaires à une in-

31 A 13 y 9 En*
(1954) Statistical computation of mean dimensions
of macromolecules I. Jour. Chem. Phys., 22,
1036-1041.

31 A 13 y 9 En*
(1955) Statistical computation of mean dimen-
sions of macromolecules II. Jour. Chem. Phys.,
23, 913-921.

31 A 13 y 9 En*
(1955) Statistical computation of mean dimensions
of macromolecules III. Jour. Chem. Phys., 23,
2314-2321.

31 A 13 y 9 En*
(1957) Statistical computation of mean dimensions
of polymer molecules IV. Jour. Chem. Phys., 26,
1742-1749.

8 A 17,20 x 8 En*
Hirsh, I. J. and Benson, R. W. (1953) Some variables
Am., 25, 499-505.

9 D 23,24 x 30 Ge
Methodenlehre in den Sozialwissenschaften.


<table>
<thead>
<tr>
<th>Reference</th>
<th>Year</th>
<th>Title</th>
<th>Journal</th>
<th>Volume</th>
<th>Issue</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 A 17 p 6,7 En</td>
<td>1957</td>
<td>Signal-flow graphs and random signals.</td>
<td>Proc. IRE</td>
<td>45</td>
<td></td>
<td>74-86</td>
</tr>
<tr>
<td>8 A 21 p 8 En</td>
<td>1951</td>
<td>Perturbation and correlation methods for enhancing the space resolution of directional receivers.</td>
<td>Proc. IRE</td>
<td>39</td>
<td></td>
<td>840</td>
</tr>
</tbody>
</table>
Hunt, G. A. and Chung, K. L. (1949) On the zeros of
\[ \sum_{1}^{n} z_l. \text{Ann. Math.,} 50, 385-400. \]


Additional Publications: H


<table>
<thead>
<tr>
<th>Page</th>
<th>Volume</th>
<th>Date</th>
<th>Author(s)</th>
<th>Title</th>
<th>Journal</th>
<th>Year</th>
</tr>
</thead>
</table>


Kimura, M. (1956) Random genetic drift in a tri-allelic locus; exact solution with a continu- 

problems in natural populations. *Proc. Third 
Berkeley Sym. on Math. Statist. and Probability*, 
4, 1-22.

Kimura, M. (1957) Some problems of stochastic 
processes in genetics. *Ann. Math. Statist.*, 28, 
882-901.

King, G. W. (1949) Stochastic methods in quantum 
mechanics. *Seminar on Scientific Computation*, 

King, G. W. (1949) Further remarks on stochastic 

King, G. W. (1951) Stochastic methods in statistical 
mechanics. Monte Carlo methods, U. S. Bureau 

King, W. I. (1915) New method for computing the 
14, 798-800.

King, W. I. (1924) Principles underlying the iso- 
lation of cycles and trends. *Jour. Amer. 
Statist. Assoc.*, 19, 468-475.


Additional Publications: K


Additional Publications:


Mann, H. B. (1945) Non parametric tests against trend. 
*Econometrica, 13, 245-259.


---

9 A 17 p 7 En


9 A 17 p 7 En


9 A 17 o 13. En


42 A 17 p 7 En


8 A 17 p 7 En


42 A 17 p 7 En


8 A 17 p 7 En


<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
<th>Authors</th>
<th>Year</th>
<th>Journal/Book Details</th>
</tr>
</thead>
</table>


Additional Publications: M

8 D 22,23,24 x 20 Fr


8 A 20 x 5 En*

Munk, W. H., Snodgrass, F. E. and Tucker, M. J.
(1959) Spectra of low-frequency ocean waves.
Bull. Scripps Institution of Oceanography, 7,
283-362.


Norwine, A. C., Davis, K. H. and Mathes, R. C. (1949)
The cathode-ray sound spectroscope. *Jour. Acous-
tical Soc. Am.*, 21, 527-537.

Nyquist, H. (1924) Certain factors affecting telegraph
Additional Publications: N

1 A - - En

1 A - - En

1 A - - - En

4 C 15,21 p
6,7 En*


Additional Publications: 0


Price, R. (1957) The autocorrelogram of a complete carrier wave received over the ionosphere at oblique incidence. Proc. IRE, 45, 879-880.


Additional Publications: P


160


169


Additional Publications: R


175


seismic analysis. Rep. No. 6, M.I.T. Geophysical 
Analysis Group, Cambridge, Mass.

Singleton, H. E. (1950) A digital electronic correl-
ator. Proc. IRE, 38, 1422-1428.

Sivian, L. J. (1929) Speech power and its measurement. 
Bell System Tech. Jour., 8, 646-661.

Slattery, T. G. (1952) The detection of a sine wave 
in the presence of noise by the use of a non-
linear filter. Proc. IRE, 40, 1232-1236.


Slepian, D. and Kac, M. (1959) Large excursions of 
1215-1227.

The distribution of quadratic forms in normal 
variates: A small sample theory with applica-


<table>
<thead>
<tr>
<th>Reference</th>
<th>Author(s)</th>
<th>Title</th>
<th>Journal</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 A 20 y 7 En</td>
<td>Spetner, L. M.</td>
<td>Errors in power spectra due to finite sample</td>
<td>Jour. Appl. Phys.</td>
<td>1954</td>
</tr>
<tr>
<td>9 A 17 y 7 En</td>
<td>Spero, R. E.</td>
<td>Effectiveness of two-step smoothing in digital control computers</td>
<td>Proc. IRE</td>
<td>1953</td>
</tr>
<tr>
<td>21 A 12 o - En</td>
<td>Spitzer, F.</td>
<td>On interval recurrent sums of independent random variables</td>
<td>Proc. Amer. Math. Soc.</td>
<td>1956</td>
</tr>
</tbody>
</table>


Additional Publications: S

infinitely divisible random variables. Sankhya,
22, 253-260.

9 A 20 x 20 En* Snedecor, G. W. and Schultz, T. W. (1933) Analysis
of variance as an effective method of handling
the time element in certain economic statistics.

8 A 24 x 3 En Schouve, D. J. (1947) The sunspot cycles before 1750.
Terr. Magnetism, 52, 233-238.

8 A 24 x 5 En Schuster, A. (1897) On the investigation of hidden
periodicities with application to a supposed
26 day period of meteorological phenomena.

8 A 20 x 5 En Seiwell, H. R. (1949) The principles of time series
analysis applied to ocean wave data. Proc.

8 A 20 x 5 En* Snodgrass, F. E., Tucker, M. J. and Munk, W. H. (1959)
Scripps Institution of Oceanography, 7, 283-362.


Additional Publications: T


Additional Publications:  

4 C 15, 21 p 6, 7 En*  

8 A 24 p 5 En  


Additional Publications: V

physics, 18, 539-586.

Rev., 107, 463-470.

Wald, A. and Mann, H. B. (1943) On the statistical treatment of linear stochastic difference equa-


430.


***


Additional Publications: W

the Pareto distribution of wealth. *Econometrica*,
25, 591-595.

8 A 20 x 20 En Wilson, E. B. (1934) The periodogram of American
business activity. *Quart. Jour. of Economics*,
48, 375-417.

9 A 20 x 20 En Wilson, E. B. (1934) Are there periods in American


9 A 21 c - En Wald, A. and Wolfowitz, J. (1943) An exact test for
randomness in the nonparametric case based on
serial correlation. *Ann. Math. Statist.*, 14,
378-388.

1 C 10 c - En* Wiener, N. and Paley, R. E. A. C. (1934) Ch. 9
(pp. 140-162), Random functions, and ch. 10
(pp. 163-178), The harmonic analysis of random
functions. From "Fourier Transforms in the
Publ.*, 19.

4 A 17 p 7 En Wiesner, J. B. (1949) Statistical theory of communi-
cation. *Proc. Nat'l. Electronics Conf.*, 5, 334-
341.

Office of Naval Research.


criterion for the design of servo-mechanisms. 

Phys., 21, 645-655.

Zadeh, L. A. (1950) Correlation functions and power 
spectra in variable networks. Proc. IRE, 38,
1342-1345.

Zadeh, L. A. (1952) Some basic problems in communi-
cation of information. Trans. of the N.Y. Acad.
of Sci., Ser II, 14, 201-204.


filters for the detection of signals in noise. 
Proc. IRE, 40, 1223-1231.


and random signals" by W. H. Huggins, Proc. IRE,

Zaremba, S. K. and Lomnicki, Z. A. (1957) On the esti-
Math. Statist., 28, 140-158.

