

The Second International
Tampere Conference in Statistics

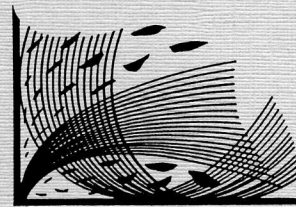
Monday 1 June to Thursday 4 June
1987
Tampere, Finland

Address for correspondence:

The Conference Secretary, C 123
Department of Mathematical Sciences/ Statistics
University of Tampere
P.O. Box 607
SF-33101 Tampere
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Final Programme

The Second International
Tampere Conference in
Statistics



June 1 - 4, 1987

Department of
Mathematical Sciences/ Statistics
University of Tampere
TAMPERE, FINLAND

The Second International Tampere Conference in Statistics

June 1 - 4, 1987
Tampere, Finland

Organizing Committee

The conference will be organized by a local committee within the Department of Mathematical Sciences/Statistics, University of Tampere.

The conference is sponsored by

The Ministry of Education of Finland
The University of Tampere
The Foundation of the University of Tampere
The City of Tampere
The Finnish Cultural Foundation
Finnair Oy
Oy International Business Machines Ab
Industry Mutual
Kansallis-Osake-Pankki
The Finnish Metalworkers' Union
Pension Insurance Company Ilmarinen
Hotel Ilves
Okobank
Sampo Insurance Company
The British Council

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PROGRAMME

The Conference will take place over four days and will comprise Plenary Sessions, sessions of Invited Talks and Contributed Papers. The topics of the conference will include linear models, multivariate analysis, statistical computation, time series analysis and related themes.

Opening Session

The Opening Session of the Conference, chaired by Professor **Tarmo Pukkila** of the University of Tampere, will be held in the Main Auditorium of the University of Tampere on Monday 1 June 1987 at 10.00 a.m.

Elina Mustonen, harpsichord:

J.S. Bach: Overture, Sarabande, Cigue
from the 4th Partita in D

Jarmo Visakorpi, University Rector

Timo Teräsvirta, The Research Institute of the
Finnish Economy, Opening Address:
"How we got the data"

Keynote Speakers

The keynote speakers and their titles will be:

T.W. ANDERSON, Stanford University, U.S.A.,
"Multivariate linear relations"

George E. P. BOX, University of Wisconsin,
Madison, U.S.A.,
*"Some aspects of statistical design in quality
improvement"*

E. J. HANNAN, The Australian National Uni-
versity, Canberra, Australia,
"The statistical theory of linear systems"

C. Radhakrishna RAO, University of Pitts-
burgh, U.S.A., National Professor of India,
*"Unified theory of estimation and prediction
in linear models with mixed effects"*

Invited Talks

All invited talks will be given in Room A I.
Invited speakers and their titles will be:

A.C. ATKINSON, Imperial College, London, U.K.,
"Robust regression and unmasking transformations"

Jerzy K. BAKSALARY, Academy of Agriculture
in Poznań, Poland,
*"Algebraic characterizations and statistical
implications of the commutativity of
orthogonal projectors"*

Knut CONRADSEN, The Technical University of
Denmark, Copenhagen, Denmark,
"Classification of digital images"
(Joint work with Bjarne Kjær Nielsen)

Takeaki KARIYA, Hitotsubashi University,
Tokyo, Japan,
*"MTV model and its application to
prediction of stock prices"*

C.G. KHATRI, Gujarat University, Ahmedabad,
India,
*"Quadratic forms and null robustness for
elliptical distributions"*

Seppo MUSTONEN, University of Helsinki,
Finland,
*"Editorial approach in statistical com-
puting"*

Michael D. PERLMAN, University of Washing-
ton, Seattle, U.S.A.,
*"On the consistency of invariant multi-
variate tests"*

John W. PRATT, Harvard University, U.S.A.,
*"Dividing the indivisible: using simple
symmetry to partition variance explained"*

Daryl PREGIBON, AT&T Bell Laboratories,
Murray Hill, U.S.A.,
*"Incorporating statistical expertise into
computer software"*

Friedrich PUKELSHEIM, University of Augs-
burg, F.R. Germany,
*"Majorization orderings for linear regression
designs"*

Tarmo PUKKILA, University of Tampere,
Finland,
*"On the order determination of time series
models"*

Jorma RISSANEN, IBM Research, San Jose,
U.S.A.,
*"Complexity and information in contin-
gency tables"*

Alastair J. SCOTT, University of Auckland,
New Zealand,
*"Generalized linear models with survey
data"*

Bimal K. SINHA, University of Maryland Balti-
more County, Catonsville, U.S.A.,
*"Robust invariant tests for variance
components"*
(Joint work with Rita Das, University of Toronto,
Canada)

Terry P. SPEED, CSIRO, Canberra, Australia,
"Generalised variance component models"

George P.H. STYAN, McGill University,
Montreal, Canada,
"Partially - ordered idempotent matrices"
(Joint work with Robert E. Hartwig, North Carolina
State University, Raleigh, U.S.A.)

Registration

All participants are required to register on arrival. The registration desk will be at the University and will be open on

Sunday, 31 May, from 16.00 to 21.30

and on

Monday, 1 June, from 8.00 a.m.

SOCIAL PROGRAMME

Civic Reception

The Mayor of Tampere will welcome all conference participants at a Civic Reception to be held at 18.30 - 20.00 on **Monday 1 June** in *Raatihuone* (Town Hall).

Sauna Party

A Sauna Party in Finnish style will be arranged at 19.00 - 23.00 on the **Tuesday** evening in *Murikka* (Institute of the Finnish Metalworkers' Union, 40 km north of Tampere). Transportation and a supper will be included in the fee of FIM 120. The number of participants is limited to 100.

The sauna bus will leave the main building of the University at 18.00 sharp and Hotel Ilves at 18.15.

Unfortunately there are *no* more tickets available for the Sauna Party.

Conference Dinner

The Conference Dinner will be held at 19.30 on **Wednesday 3 June** in Hotel Ilves. The cost of the dinner is FIM 180. There are still a few coupons available for the Dinner at the registration desk.

Excursions

Two excursions will be arranged. On Tuesday there will be a sight-seeing tour (ca. 3½ hours) in Tampere. The tour includes visits to the new Tampere Main Library, Näsinneula, Art Museum of Tampere and Kehräsaari. On Wednesday a visit to *Iittala* glass factory (50 km south of Tampere) and the art museum of *Visavuori* will be arranged.

The buses for the excursions leave the main building of the University at 9.30 a.m. on Tuesday and Wednesday. Some tickets for the excursions are still available at the registration desk. The charge for each excursion is FIM 50.

EXHIBITS

There will be exhibitions of books, equipment and micro-computers. Among the exhibitors will be

- APL • Apple • IBM • SPSS • SURVO 84C
- The Institute of Mathematical Statistics
- The International Statistical Institute
- John Wiley & Sons Limited Publishers
 - Marcel Dekker Inc.
- North-Holland/Elsevier Science Publishing Co.
 - Physica Verlag AG.
 - Springer-Verlag Inc.
 - Van Nostrand Reinhold Co.

Further information will be available at the registration desk.

SESSIONS OF CONTRIBUTED PAPERS

● **TUESDAY MORNING, June 2** ●

SESSION 1: Time Series and Multivariate Analysis

Tuesday, 8.55 - 9.40 a.m.

Room A I

Chair: **de GOOIJER, Jan**, U of Amsterdam, The Netherlands

Guégan, Dominique, U of Paris-Nord, France,

"Statistical properties of polynomial state affine models"

Browne, M. W. and Neudecker*, H., U of South Africa, Pretoria and U of Amsterdam, The Netherlands,

"The covariance matrix of a general second degree symmetric matrix polynomial under normality assumptions"

de Gooijer*, Jan G. and Heuts, Ruud M.J., U of Amsterdam and Tilburg U, The Netherlands,

"Higher order moments of bilinear time series processes with symmetrically distributed errors"

SESSION 2: Statistical Modelling

Tuesday, 8.55 - 9.40 a.m.

Room D Xa

Chair: **BRÄNNÄS, Kurt**, U of Umeå, Sweden

Korhonen, Pekka and Narula, Subhash C., Helsinki

School of Economics, Helsinki, Finland and Virginia Commonwealth U, Richmond, USA,

"Subjectivity in statistics"

Květoň, Karel, Czech Technical U, Prague, Czechoslovakia,

"Comparison of some methods used to choose empirical models"

Brännäs, Kurt, U of Umeå, Sweden,

"Control in the duration model framework"

SESSION 3: Canonical Analysis

Tuesday, 8.55 - 9.40 a.m.

Room D Xb

Chair: **STYAN, George P.H.**, McGill U, Montreal, Canada

Puntanen, Simo, U of Tampere, Finland,

"On the relative goodness of OLS and on some associated canonical correlations"

Latour*, Dominique, Puntanen, S. and Styan, G.P.H., North Carolina State U, Raleigh, USA, U of Tampere, Finland and McGill U, Montreal, Canada,

"Equalities and inequalities for the canonical correlations associated with some partitioned generalized inverses of a covariance matrix"

Krus*, David J. and Liang, Kun-Hsia, Arizona State U, Tempe, USA,

"Multiple crossvalidation in canonical analysis"

SESSION 4: Multivariate Analysis

Tuesday, 8.55 - 9.40 a.m.

Room D XI

Chair: **NERLOVE, Marc**, U of Pennsylvania, Philadelphia, USA

Danial*, Edward J. and Katti, Shriniwas K., Kearney State C and U of Missouri, USA,

"Asymptotic result through multivariate analysis"

Jinadasa, K.G., and Tracy*, D.S., U of Windsor, Canada,

"Multivariate linear ultrastructural relationships model"

Diebold, Francis X. and Nerlove*, Marc, Federal Reserve Board, Washington, USA and U of Pennsylvania, Philadelphia, USA,

"Factor structure in a multivariate GARCH model of exchange rate fluctuations"

SESSION 5: Statistical Studies in the Joint Institute for Nuclear Research in Moscow

Tuesday, 8.55 - 9.40 a.m.

Room A III

Chair: **OJA, Hannu**, U of Oulu, Finland

Slowinski, B. Joint I for Nuclear Research, Moscow, USSR,

"Statistical modelling in phenomenological description of electromagnetic cascade processes produced by high-energy gamma quanta"

Zrelov, P.V. and Ivanov, V.V., Joint I for Nuclear Research, Moscow, USSR,

"The small probability events separation method based on Smirnov-Cramér-Von Mises test"

Zrelov, P.V. and Ivanov, V.V., Joint I for Nuclear Research, Moscow, USSR,

"The small sample cumulative distributions of the Smirnov-Cramér-Von Mises statistics"

● **TUESDAY AFTERNOON, June 2** ●

SESSION 6: Experimental Design

Tuesday, 15.30-16.45

Room A I

Chair: **MANLY, Bryan F.J.**, U of Otago, Dunedin, New Zealand

Azzalini, Adelchi and Giovagnoli*, Alessandra, U of Perugia, Italy,

"Some optimal designs for repeated measurements in the case of autoregressive errors"

Koukouvinos, Christos and Kounias*, Stratis, Aristotle U of Thessaloniki, Greece,

"Optimal designs in linear models and Hadamard matrices"

Mejza, Stanislaw, A of Agriculture, Poznań, Poland,

"Experiments in incomplete split-plot designs"

Shanker, Kripa and Shah*, S.M., Sardar Patel U, Vallabh Vidyanagar, India,

"Bias and mean square error of an estimation procedure involving three preliminary tests of significance in an ANOVA mixed model"

Manly*, Bryan F.J. and McAlevey, Lynn, U of Otago, Dunedin, New Zealand,

"A randomization alternative to the Bonferroni inequality with multiple F tests"

SESSION 7: Robust Estimation

Tuesday, 15.30-16.45

Room D Xa

Chair: **WELSCH, Roy E.**, M.I.T., Cambridge, USA

Liski, Erkki P., U of Dortmund, F.R. Germany and U of Tampere, Finland,

"Influential observations in growth curves model"

Militký, Jiří, Květoň, Karel and Čáp, Jaroslav, Research I for Textile Finishing, Czech Technical U and Headquarters of Cotton Industry, Czechoslovakia,

"Comparison of some influence measures in nonlinear regression"

Samarov, Alexander, U of Lowell & M.I.T., Cambridge, USA

"On the efficiency of the sample mean in the long memory noise"

Ososkov, G.A., Joint I for Nuclear Research, Moscow, USSR,

"Robust regression for the heavy contaminated sample"

Welsch, Roy E., M.I.T., Cambridge, USA,

"Background plots for regression diagnostics"

SESSION 8: Statistical Modelling and Related Topics

Tuesday, 15.30 - 16.45

Room D Xb

Chair: **SAIKKONEN, Pentti**, U of Helsinki, Finland

Salem*, A.M. and Wahab, S.A., Ain Shams U, Cairo, Egypt,
"On the determination of the amplitude of the quasi-stationary phenomena"

Saario, Vesa, Avainlaskemat Oy, Tampere, Finland,
"Some properties of the sequential Markovian allocation problem"

Karasek, Mirek, Jeddah, Saudi Arabia,
"Time series of relative numbers as an input into O.R. macroeconomic modelling"

Al-Ghurabi, Saleem, Baghdad U, Iraq,
"Comparison of rank tests and their application"

Di Traglia, Mario, U of Rome, Italy,
"The extreme point model in superpopulation theory"

SESSION 9: Statistical Studies in the USSR

Tuesday, 15.30-16.45

Room D XI

Chair: **LYASHENKO, N.N.**, Steklov Math. I, Leningrad, USSR

Konev*, V.V. and Pergamenschikov, S.M., U of Tomsk, USSR,
"Sequential estimation of parameters of an explosive autoregression"

Koshkin, Gennady M., Siberian Physico-Technical I, Tomsk, USSR,
"Comparison of two types of improved kernel density estimators"

Möls, T., Tartu State U, Estonia, USSR,
"A general classification of ANOVA models"

Timerkaev, V.S., I of Seismology, Aini, USSR,
"A method for estimation on possible effects of real processes on the stability of complex objects"

Lyashenko, N.N. and Nikulin, M.S., Steklov Mathematical I, Leningrad, USSR,
"Rounding errors in computer statistics"

PROGRAMME

	Monday 1 June	Tuesday 2 June	Wednesday 3 June	Thursday 4 June	
8.55-9.40		Contributed Papers: Sessions 1 - 5	Contributed Papers: Sessions 10 - 14	Contributed Papers: Sessions 18 - 21	8.55-9.40
9.40-10.00		Coffee	Coffee	Coffee	9.40-10.00
10.00-10.30 10.30-11.00	Opening Session Opening Address: T. Teräsvirta	J.K. Baksalary K. Conradsen Chair: E.P. Liski	J. Rissanen A.C. Atkinson Chair: A. Ekholm	G.P.H. Styan C.G. Khatri Chair: M.D. Perlman	10.00-10.30 10.30-11.00
11.00-11.10	Break	Break	Break	Break	11.00-11.10
11.10-12.00	T.W. Anderson Chair: G.P.H. Styan Discussant: M.D. Perlman	G.E.P. Box Chair: T. Teräsvirta Discussant: S. Kounias	E.J. Hannan Chair: M. Deistler Discussant: K. Conradsen	C.R. Rao Chair: T. Pukkila Discussant: C.G. Khatri	11.10-12.00
12.00-13.30	Lunch	Lunch	Lunch	Lunch	12.00-13.30
13.30-14.00 14.00-14.30	T.P. Speed J.W. Pratt Chair: F. Pukelsheim	M.D. Perlman A.J. Scott Chair: E. Arjas	B.K. Sinha F. Pukelsheim Chair: T.P. Speed		13.30-14.00 14.00-14.30
14.30-14.50	Coffee	Coffee	Coffee		14.30-14.50
14.50-15.20 15.20-15.50 15.50-16.20	T. Pukkila S. Mustonen D. Pregibon Chair: P. Naeve	T. Kariya Chair: B.K. Sinha 15.30-16.45 Contributed Papers: Sessions 6, 7, 8, 9	15.00-16.15 Contributed Papers: Sessions 15, 16, 17		14.50-
	Civic Reception 18.30 - 20.00	Sauna Party 19.00 - 23.00	Conference Dinner 19.30 -		

● **WEDNESDAY MORNING, June 3** ●

SESSION 10: Parametric and Nonparametric Analysis

Wednesday, 8.55 - 9.40 a.m. Room A I

Chair: **TERÄSVIRTA, Timo**, ETLA, Helsinki, Finland

Georgiev, Alexander A., Technical U of Wroclaw, Poland,
"Some recent developments in the nonparametric time series analysis"

Feuerverger, Andrey, U of Toronto, Canada,
"Some Fourier procedures for time domain analysis of parametric and semiparametric time series models"

Mellin*, Ilkka and **Teräsvirta, Timo**, U of Helsinki and Research I of the Finnish Economy, Helsinki, Finland,
"Determination of the value of the smoothing parameter in nonparametric regression"

SESSION 11: Mathematical Statistics

Wednesday, 8.55 - 9.40 a.m. Room D Xa

Chair: **NIEMI, Hannu**, U of Helsinki, Finland

Gelfand, Alan E., U of Connecticut, Storrs, USA,
"Estimation of a restricted variance ratio"

Merikoski, Jorma Kaarlo, U of Tampere, Finland,
"Underestimating the largest eigenvalue of a covariance matrix"

Nordström*, Kenneth and **von Rosen, Dietrich**, U of Pittsburgh, USA (and U of Helsinki) and U of Stockholm, Sweden,
"Algebra of subspaces with applications to problems in statistics"

SESSION 12: Linear Models I

Wednesday, 8.55 - 9.40 a.m. Room D Xb

Chair: **KOUNIAS, Stratis**, Aristotle U of Thessaloniki, Greece

Khuri, Andre' L., U of Florida, Gainesville, USA,
"Exact tests for the main effects' variance components in an unbalanced random two-way model"

Klonecki, W. and **Zontek*, S.**, I of Mathematics, Polish A of Sciences, Wroclaw, Poland,
"Inadmissibility results for linear simultaneous estimation in the multiparameter gamma distribution"

Zmyslony*, R. and **Kageyama, S.**, I of Mathematics, Polish A of Sciences, Wroclaw, Poland and Hiroshima U, Japan,
"Estimation of parameters in block designs under mixed models"

SESSION 13: Statistical Distributions

Wednesday, 8.55 - 9.40 a.m. Room D XI

Chair: **SESHADRI, V.**, McGill U, Montreal, Canada

Letac, Gérard, U Paul Sabatier, Toulouse, France,
"The reciprocity of exponential families and the Wald-Tweedie method"

Jajuga, Krzysztof, Akademia Ekonomiczna, Wroclaw, Poland,
"Elliptically symmetric distributions and their application to classification and regression"

Seshadri, V., McGill U, Montreal, Canada,
"Exponential models, Brownian motion and independence"

SESSION 14: Statistical Applications in Middle East

Wednesday, 8.55 - 9.40 a.m. Room A III

Chair: **AL-ANI, Marouf**, Baghdad U, Iraq

Al-Salihi, Rashid, Baghdad U, Iraq,
"Time series analysis of total soluble salts in Euphrates river at Felluja station"

Doud, Sabri, Baghdad U, Iraq,
"Time series analysis of sulphate distribution in Euphrates river"

Al-Ani, Marouf, Baghdad U, Iraq,
"Mathematical analysis of hardness distribution in Euphrates river at Falluja station"

● **WEDNESDAY AFTERNOON, June 3** ●

SESSION 15: Time Series Analysis

Wednesday, 15.00 - 16.15

Room A I

Chair: **KOREISHA, Sergio**, U of Oregon, Eugene, USA

Luukkonen, Ritva; Saikkonen, Pentti and Teräsvirta, Timo, I of Occupational Health, Helsinki, U of Helsinki and Research I of the Finnish Economy, Helsinki, Finland,

"Testing linearity in univariate time series models"

Pötscher, Benedikt M., Yale U, New Haven, USA,

"Orderestimation in nonstationary autoregressive models and selection of regressors"

Koreisha*, Sergio and Pukkila, Tarmo, U of Oregon, Eugene, USA and U of Tampere, Finland,

"Regression methods for estimating autoregressive moving average models"

Marrero, Osvaldo, Villanova U, USA,

"Analysis of small-amplitude seasonal variation"

Wang, Liqun, U of Hannover, F.R. Germany,

"General structure and parametrization of ARMAX systems with a priori restrictions"

SESSION 16: Linear Models II

Wednesday, 15.00 - 16.15

Room D Xa

Chair: **FAREBROTHER, R.W.**, U of Manchester, UK

Deistler, Manfred, Technical U of Vienna, Austria,

"Linear dynamic errors-in-variables systems"

Alt, Raimund, Vienna, Austria,

"Application of closed testing procedures to nested specification hypotheses"

Schaffrin, Burkhard, U of Stuttgart, F.R. Germany,

"Less sensitive tests by introducing stochastic linear hypotheses"

Amirkhalkhali*, Saleh, and Rao, U.L. Gouranga, Saint Mary's U, Halifax and Dalhousie U, Halifax, Canada,

"On the usefulness of computed standard errors of alternative estimators for regression with autocorrelated Gaussian and non-Gaussian stable disturbances"

Farebrother, R.W., U of Manchester, UK,

"Simultaneous confidence intervals when the regressor matrix is unbalanced"

SESSION 17: Regression Analysis

Wednesday, 15.00 - 16.00

Room D Xb

Chair: **FELLMAN, Johan**, Swedish School of Economics, Helsinki, Finland

Trenkler*, G., Stahlecker, P., Schipp, B., and Hering, F.,

U of Dortmund, U of Mainz, U of Dortmund and U of Dortmund, F.R. Germany,

"Iterative improvements of a partial mimimax estimator in regression analysis"

Baldessari, Bruno, U of Rome, Italy,

"On regression analysis under the intrinsic inference model for stratified normal populations"

Heijmans, R.D.H. and Neudecker, H., U of Amsterdam, The Netherlands,

"The coefficient of determination revisited"

Okta*, W., Kornacki, A. and Wawrzosek, J., A of Agriculture, Lublin, Poland,

"Invariant linear transformations of the general Gauss-Markoff model. Estimating and testing"

PHONE NUMBERS

<i>The Conference Secretary</i>	156 288
<i>University of Tampere</i>	156 111
City Air Terminal (Finnair)	33440, 927 2121
Airport (Tampere-Pirkkala)	697 200
Railway Station	35 600, 152 111
Bus Station	31 522
<i>Telegraph & Telex</i>	021, 150 111
<i>City Tourist Office</i>	126 625, 126 775
Doctor Services	008
Alarm Number	000, 37 477
Emergency Hospital	606 111
Police	195 111
Taxi	041
<i>Hotel Cumulus</i>	35 500
<i>Student Dormitory Domus</i>	555 000
<i>Hotel Ilves</i>	121 212
<i>Summerhotel Rasti</i>	30 640
<i>Hotel Victoria</i>	30 640

SESSION 18: Discriminant Analysis and Clustering

Thursday, 8.55 - 9.40 a.m.

Room A I

Chair: **KANTO, Antti J.**, University of Vaasa, Finland**Pastijn, H.**, Royal Military Academy, Brussels, Belgium,*"MCDM methods versus discriminant and multivariate analysis for classification problems"***Pynnönen, Seppo**, U of Vaasa, Finland,*"Selection of variables in nonlinear discriminant analysis by information criteria"***Trauwaert*, E. and Kaufman, L.**, Mol, Belgium,*"Product of fuzzy determinants as clustering objective"***SESSION 19: Distributions and Graphical Modelling**

Thursday, 8.55 - 9.40 a.m.

Room D Xa

Chair: **EKHOLM, Anders**, U of Helsinki, Finland**Ignatov, Z.G. and Kaishev*, V.K.**, Bulgarian A of Sciences, Sofia, Bulgaria,*"On the computation of distributions of serial correlation coefficients through B - splines"***Kollo, T.**, Tartu State U, Estonia, USSR,*"Asymptotic distributions for functions of mean and covariance"***Ekhholm*, Anders and Whittaker, Joe**, U of Helsinki, Finland and U of Lancaster, UK,*"Parametric versus graphical collapsibility and conditional independence"***SESSION 20: Estimation and Related Topics**

Thursday, 8.55 - 9.40 a.m.

Room D Xb

Chair: **MACGIBBON, Brenda**, Concordia U, Montreal, Canada**Konakov, V.D.**, Central Economics Mathematical I, A of Sciences, Moscow, USSR,*"Nonparametric density estimation. L_∞ approach"***Midha, Chand**, U of Akron, USA,*"Interval estimation in unequal probability sampling"***Bravo, Gina and MacGibbon*, Brenda**, U of Sherbrooke and Concordia U, Montreal, Canada,*"Improved estimators of a location vector with unknown scale parameter"***SESSION 21: Statistical Computation**

Thursday, 8.55 - 9.40 a.m.

Room D XI

Chair: **NAEVE, Peter**, U of Bielefeld, F.R. Germany**Anderson, A.J.B.**, U of Aberdeen, Scotland,*"Fortran8x as a language for statistical computation"***Daniel*, Edward J. and Katti, Shriniwas K.**, Kearney State C and U of Missouri, USA,*"Computing the maximum likelihood estimates of the hyper-Poisson parameters interactively through APL computer language"***Matuszewski, Andrzej**, I of Computer Science, Polish A of Sciences, Warsaw, Poland,*"Certain Bayesian methods for the computer aided statistical course"*

PARTICIPANTS BY COUNTRIES [7 May 1987]

	Speakers	All		Speakers	All
U.S.A.	20	21	Belgium	2	2
Finland	13	115	Czechoslovakia	2	3
U.S.S.R.	11	13	France	2	2
Poland	8	9	New Zealand	2	2
Canada	6	9	Bulgaria	1	1
F.R. Germany	4	7	Denmark	1	1
Iraq	4	4	Egypt	1	1
Holland	3	4	Greece	1	1
India	3	3	Japan	1	2
Italy	3	5	Saudi-Arabia	1	1
U.K.	3	4	Sweden	1	2
Australia	2	2	Norway	0	1
Austria	2	2	Switzerland	0	1
			Total	97	218

Invited speakers: 21

Contributed papers: 76

Number of countries: 26
