**Meddelelser**, v/Eva B. Vedel Jensen
Matematisk Institut
Aarhus Universitet

BREV
Ukonvoluteret

**PP**
Danmark

Returneres ved varig adresseændring

Næste nummer af "MEDDELELSER" udkommer i begyndelsen af november 1996.
Bidrag til dette nummer skal være redaktøren i hænde senest **onsdag den 23. oktober 1996**.
Bidrag bedes sendt til:

**Meddelelser**, v/ Eva B. Vedel Jensen
Afdeling for Teoretisk Statistik
Matematisk Institut
Ny Munkegade
8000 Århus C
**eller med e-mail til**: eva@mi.aau.dk

Samme adresse bedes benyttet ved **indmeldelse** i DSTS og ved **adresseændring**.

# MEDDELELSER

Dansk Selskab for Teoretisk Statistik

21. aargang nr. 7 oktober 1996

## Aftenmøde i Selskabet

**Tirsdag d. 22. oktober 1996 kl. 19.30**
**I Auditorium 10 på H.C. Ørsted Instituttet**

**Hans Kurt Kvist** (Handelshøjskolen i København)

*Statistisk stikprøveteori*

**Resumé**

I foredraget vil jeg give en oversigt over stikprøveteori og forsøge at knytte an til 'almindelig' statistik. Specielt vil jeg omtale problemer med analyse af data fra komplekse stikprøveplaner, og kommentere udviklingen om såkaldt design-baseret, model-baseret og model-assisteret inferens i stikprøveteorien.

*Efter foredraget vil der være uformelt samvær på Institut for Matematisk Statistik. Før mødet er der middag med foredragsholderne på restaurant Barcelona. Alle er velkomne (for egen regning). Tilmelding til Peter Dalgaard (35 32 79 18).*

## Selskabets bestyrelse:

| | |
|---|---|
| **Formand:**<br>Peter Dalgaard<br>Biostatistisk Afdeling<br>Panum Instituttet<br>Blegdamsvej 3<br>2200 København N | Tlf: 35 32 79 18<br>Fax: 35 32 79 07<br>e-mail: p.dalgaard@biostat.ku.dk |
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| **Redaktør:**<br>**Eva B. Vedel Jensen**<br>Afdeling for Teoretisk Statistik<br>Matematisk Institut<br>Århus Universitet<br>8000 Århus C | Tlf: 89 42 31 88<br>89 42 35 18 *(direkte)*<br>Fax: 86 13 17 69<br>e-mail: eva@mi.aau.dk |
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# SYMPOSIUM I ANVENDT STATISTIK
# 27. - 29. JANUAR 1997
# LYNGBY

## CALL FOR PAPERS

Næste års symposium i Anvendt Statistik holdes på Danmarks Tekniske Universitet i Lyngby fra d. 27. januar til d. 29. januar.

Formålet med symposiet er at skabe et forum for udveksling af ideer og erfaringer mellem forskellige statistiske miljøer. Der lægges specielt vægt på anvendt statistik.

Som noget nyt vil den ene dag blive tilegnet et specielt tema, der i år er KEMOMETRI. Temaet vil blive indledt af et inviteret oversigtsforedrag.

Personer, der vil bidrage med et indlæg til symposiet - enten indenfor temaet kemometri eller indenfor et andet emne - bedes sende en titel samt et kort resume til hh@imm.dtu.dk eller til Helle Holst, IMM, Bygning 321, DTU, 2800 Lyngby

SENEST D. 1. NOVEMBER 1996

Indlæggene på symposiet forventes at blive publiceret i en bog, der udkommer i forbindelse med symposiet.

På organisationskommiteens vegne

Helle Holst

# The Second Scandinavian–Ukrainian Conference in Mathematical Statistics

## Umeå, Sweden, June 8 – 13, 1997

## FIRST ANNOUNCEMENT

### Background

The First Ukrainian-Scandinavian Conference on Stochastic Dynamical Systems: Theory and Applications was held in Uzhgorod, Ukraine in 1995. It will be followed by The Second Scandinavian-Ukrainian Conference in Mathematical Statistics Umeå, Sweden in 1997.

The programme is intended to appeal to anyone interested in Mathematical Statistics. This is understood in its wide sense as the scientific area covering probability, stochastic processes, theory and methodology of statistical inference, and applications based on stochastic models.

Participation is open to statisticians from all countries.

**Preliminary registration** is made by sending the attached form to the address given below. Please make your registration before December 1, 1996.

### Address

The Second Scandinavian–Ukrainian Conference in
Mathematical Statistics
Department of Mathematical Statistics
Umeå University
S-90187 Umeå
SWEDEN

Tel: +46-90-165225
Fax: +46-90-167658
E-mail: ssuc@matstat.umu.se
WWW: http://www.matstat.umu.se/ssuc.html

## Preliminary Registration Form

**Family name:**

**First name:**

**Affiliation:**

**Correspondence address:**

**Telephone:**

**Telefax:**

**E-mail:**

**I wish to present a paper ( )**

**Title of the paper:**

**Date:**

**Signature:**

# International Biometric Society
# Nordic Regional Meeting
# invites to a meeting in
# Aas, Norway
# June 17-20, 1997

The programme will cover biometric research and development over the full range of applied fields, including agriculture and forestry, medicine, biology, the environment and other areas of life sciences. Efforts are made to involve biometricians from the German Region.

**CONFERENCE VENUE**
The meeting will be held at the Agricultural University of Norway, at Aas. The conference venue is located 30 km south of Oslo, and is easily accessible from Oslo by train or car.

**PRELIMININARY LIST OF TOPICS**
The list include methods in stereology, semiparametric methods, reference values, image analysis and spatial statistics, latent class models, informative missing data, multivariate models for discrete data, model selection and model validation, interim analysis, crossover trials.

**PRE-CONFERENCE COURSE**
The organizers plan a pre-conference course, held at Aas, June 16-17. Most likely, the topic will be Mixed models within the class of generalized linear models.

**ORGANIZERS**

Programme committee:
Lene Theil Skovgaard, Denmark (chair)
Holmgeir Bjørnsson, Iceland
Lennart Bondesson, Sweden
Ludwig Fahrmeir, Germany
Sture Holm, Sweden
Esa Laara, Finland
Aage Nielsen, Denmark
Tormod Næs, Norway
Jukka Ofversten, Finland
Stein Emil Vollset, Norway

Local committee:
Are Aastveit (chair)
Trygve Almøy
Doris Tove Kristoffersen
Petter Laake

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**Biostatistisk Afdeling**
**Københavns Universitet**

SEMINAR I ANVENDT STATISTIK

Seminaret afholdes kl. 15.15, Panum Instituttet, Blegdamsvej 3. (Indgangen Nørre Alle 20 kan også benyttes).

Der serveres te i Biostatistisk Afdeling på gangarealet (33.4.11) kl. 14.45.

Fredag d. 25. oktober 1996, lokale 21.1.25 **BEMÆRK UGEDAG!**

**Robust mixed effects linear models and applications in animal breeding**

Daniel Gianola (joint work with Ismo Stranden)

Department of Animal Sciences, University of Wisconsin, Madison

Mixed linear models, in the sense of including both "fixed" and "random" effects in the structure, are used widely in quantitative genetic analysis. In genetics, random effects are correlated due to the fact that some individuals have genes in common. Dispersion parameters are estimated often under the assumption of normality, using restricted maximum likelihood (REML). Estimates of fixed and random effects are then obtained employing an empirical BLUE or BLUP, conditionally on the REML estimates; this ignores the error of estimation of the dispersion structure. This problem is completely solved, at least from a Bayesian perspective, by using a hierarchical analysis implemented possibly with a Markov Chain Monte Carlo method such as the Gibbs sampler.

A serious problem in animal breeding is the undeclared preferential treatment of animals which have an unusual economic value. For example, dairy cows which are daughters of artificial insemination bulls tend to receive additional feeding and care, relative to their herd-mates. As long as genetic evaluation systems lack information about such preferential treatment, predictions of breeding value of favored animals obtained with mixed Gaussian models are inflated, whereas those of other animals are deflated. So far, this problem has not been solved satisfactorily.

Here, we discuss a "robust" mixed effects linear model based on the t-distribution. The sampling model can be univariate or multivariate-t, and the random effects can be either Gaussian or multivariate-t. The latter distribution may provide a "robust" specification for the situation where the genetic model is incompletely specified. The parameters of the model include the "fixed" and "random" effects, the components of variance (or covariance in the multivariate situation) and the degrees of freedom of the t-distributions. The Gibbs sampler employs a data augmentation strategy where auxiliary Gaussian distributions with randomly varying dispersion parameters are introduced. All conditional posterior distributions are in known forms, so drawings are relatively easy to effect. A situation where preferential treatment occurs was simulated. It is shown that the mean squared error of predictions of breeding values and of genetic response to selection can be reduced in the t-model (relative to the Gaussian model) when preferential treatment occurs. A multivariate generalization suitable for a multiple trait analysis is presented.

– Peter Dalgaard

**Laboratory of Actuarial Mathematics**
**University of Copenhagen**

Universitetsparken 5 ◊ DK-2100 Copenhagen Ø
☎ 45 35 32 07 90 ◊ fax 45 35 32 07 72 ◊ Actuarial@math.ku.dk

# Forsikringsmatematisk kollokvium

## Tomas Björk

**(Stockholm School of Finance, p.t. Univ. of Copenhagen, Fml)**

**H.C. Ørsted Institute, Lecture Hall 10**

**Tuesday October 1, 15.15: "Diversified portfolios in continuous time"**

**ABSTRACT: We study a financial market containing an infinite number of assets, where each asset price is driven by an idiosyncratic random source as well as by systematic noise term. Introducing "asymptotic assets" which correspond to certain infinitely well diversified portfolios we study absence of (asymptotic) arbitrage, and in this context we obtain continuous time extensions of atemporal APT results. We also study completeness and derivative pricing, showing that the possibility of forming infinitely well diversified portfolios has the property of completing the market. It turns out that models where the all risk is of diffusion type are qualitatively quite different from models where one risk is of diffusion type and the other is of Poisson type. We also present a simple martingale based theory for absence of asymptotic arbitrage.**

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## Shaun Wang

**(University of Waterloo, p.t. Univ. of Copenhagen, Fml)**

**H.C. Ørsted Institute, Lecture Hall 10**

**Tuesday October 8, 15.15: "Ambiguity and Measurement of Risks"**

**ABSTRACT: Traditional financial pricing models assert that only systematic risks should be priced. Insurance CAPM has been used in U.S. court hearings in deciding the adequacy of insurance rate levels. In this talk we will examine the implications of ambiguity on the concept of systematic risks. A new pricing model is proposed and tested with empirical experiments.**

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## Jostein Paulsen

**(University of Bergen, p.t. Univ. of Copenhagen, Fml)**

**H.C. Ørsted Institute, Lecture Hall 10**

**Tuesday October 22, 15.15: "Ruin theory with stochastic return on investments"**

**ABSTRACT: We consider a risk process with stochastic interest rate, and show that the probability of eventual ruin and the Laplace transform of the time of ruin can be found by solving certain boundary value problems involving integro-differential equations. These equations are then solved for a number of special cases. We also show that a sequence of such processes converges weakly towards a diffusion process, and analyse the above-mentioned ruin quantities for the limit process in some detail.**

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## Bjarne Højgaard

**(Aalborg University)**

**H.C. Ørsted Institute, Lecture Hall 10**

**Tuesday October 29, 15.15: "Optimal proportional reinsurance policies for diffusion models"**

**Abstract**

When applying a proportional reinsurance policy $\pi$ the reserve of the insurance company $\{R_t^\pi\}$ is governed by a SDE $dR_t^\pi = a_\pi(t)\mu dt + a_\pi(t)\sigma dW_t$, where $\{W_t\}$ is a standard Brownian motion, $\mu, \sigma > 0$ are constants and $0 \leq a_\pi(t) \leq 1$ is the control process, where $1 - a_\pi(t)$ denotes the fraction, that is reinsured at time $t$. In this talk we show how to find a policy that maximizes the return function $V_\pi(x) = \mathbb{E}_x \int_0^{\tau_\pi} e^{-ct} R_t^\pi dt$, where $c > 0$, $\tau_\pi$ is the time of ruin, and $x$ is the initial reserve.

This is a joint work with prof. Michael Taksar from SUNY, Stony Brook, New York.

## *Lektorat i Statistik*

Ved KVL, Institut for Matematik og Fysik, ønskes et lektorat i statistik besat fra den 1/1 1997 eller snarest derefter.

Arbejdsopgaverne omfatter primært forskning og undervisning i statistik, herunder statistiske metoders anvendelser i andre af Landbohøjskolens fagområder.

I overensstemmelse med stillingsstrukturen lægges der ved besættelse af stillingen hovedvægt på ansøgernes forskningsmæssige kvalifikationer. Kvalifikationskravet for lektoransættelse svarer til, hvad der kan opnås gennem ansættelse som adjunkt. Det forudsættes, at ansøgeren har dokumenteret videnskabelig produktion på internationalt niveau inden for det statistiske forskningsområde, som omfatter matematisk statistik, statistisk metodeudvikling og statistiske anvendelser. Kvalifikationer inden for tilgrænsende fagområder, især datalogi og matematik, betragtes som en fordel, ligesom statistiske anvendelser inden for jordbrugsforskning eller beslægtede områder. Herudover lægges der vægt på, om ansøgeren har tilfredsstillende undervisningsmæssige kvalifikationer. Det er endvidere ønskeligt, at lektoren er initiativrig, har gode samarbejdsevner og har solide, dokumenterede pædagogiske kvalifikationer.

Løn- og ansættelsesvilkår i henhold til aftale mellem Finansministeriet og AC.

Ansøgningen skal indeholde personlige data (herunder dokumentation for uddannelse), og skal vedlægges de arbejder, ansøgeren ønsker at få inddraget i bedømmelsen samt en fuldstændig liste over publicerede arbejder. Ansøgeren opfordres til at skrive et 2-3 sider langt notat, der refererer ansøgerens 5-10 vigtigste arbejder og belyser ansøgerens pædagogiske kvalifikationer. Desuden vedlægges andet materiale, der kan belyse ansøgerens forsknings- og undervisningsmæssige kvalifikationer. De vedlagte arbejder/materiale m.v. bedes indsendt sorteret i 4 ens sæt.

Udover det materiale ansøgeren har ønsket at få inddraget i bedømmelsen, kan bedømmelsesudvalget inddrage yderligere materiale i sin bedømmelse af den pågældende. Det påhviler i givet fald ansøgeren efter anmodning at fremsende materialet til udvalget.

Ansøgeren vil blive bedømt i henhold til Undervisningsministeriets bekendtgørelse nr.728 af 9. september 1993.

Bedømmelsesudvalgets indstilling vil i sin helhed blive sendt til alle ansøgere.

Yderligere oplysninger om lektoratet kan fås ved henvendelse til institutbestyrer K. Høgh-Schmidt på tilf. Nr. (+45) 35 282305.

Ansøgninger mærket 621/00066–199 sendes til **Den Kgl. Veterinær- og Landbohøjskole, Administrationen, Bülowsvej 13, 1870 Frederiksberg C** og skal være Højskolen i hænde **senest 1. november 1996 kl. 12.00.**