

Kaarina, 31st of December, 1987

The Fourth EURO Summer Institute

The Fourth EURO Summer Institute was held at Turku School of Economics and Business Administration, in Turku, Finland from 5 June to 21 June, 1987. The theme of the Institute was "Systems Science".

Following the traditions and the well-proved method of former EURO Summer Institutes the Summer Institute started during the weekend. The weekend consisted of two lectures, of informal exchange of ideas and of becoming acquainted with Finnish country side and with the Summer Institute city, Turku. This gave the ground for active, constructive and co-operative work and for the good atmosphere of the Summer Institute.

The scientific programme of the next two weeks consisted of presentations of the participants and of the lectures given by the invited speakers. In the summer institute there were 20 participants from 12 different countries. The papers dealt with different aspects of systems science. The participants and the titles of the presented papers were:

- Mette Båstrup (Denmark):** "Network Planning and Non-Quantifiable Criteria: Theory and Case Studies",
- Warner Carvajal (England):** "The Application of Systems Thinking to Non-Industrialized Countries",
- Guy Engelen (Belgium):** "The Theory of Self-Organization and Modelling Complex Urban Systems",
- Boaz Golany (Israel):** "An Interactive MOLP Procedure for the Extension of DEA to Effectiveness Analysis",
- Lone Aalekjær Hansen (Denmark):** "Statistics, Graphs and Questionnaires",
- Dag Haugland (Norway):** "Petroleum Field Optimization. Comments on Models and Solution Techniques",
- John Holt (England):** "Assessing the Need for Decision Support Systems",
- Satu-Päivi Kantola (Finland):** "Qualitative Analysis of a Model of Economic Growth with Pollution",
- Tuula Kinnunen (Finland):** "On the Attractors of Some Discrete Time Growth Models",
- Branko D. Kovacevic (Yugoslavia):** "Analysis of Robust Recursive Identification Algorithms",
- Harald Kvaale (Norway):** "A Simulation Model That Will Provide Decision Support in the Design of a New Generation Fast Patrol Boats",
- Jan Leysen (Belgium):** "Towards the Planning of Actions in Complex Environments",
- Antoni Ligeza (Poland):** "Expert Systems Approach to Decision Support",

- João César das Neves (Portugal):** "Poverty Equilibrium - An Introductory Systemic Analysis",
- Zita Paprika (Hungary):** "Representation and Facilitation of Decision Making",
- António J. L. Rodrigues (Portugal):** " On Structure and Logic in Knowledge-Based Representations of Systems Simulation Models",
- Andrzej Stachurski (Poland):** "Merits and Drawbacks of a Global Optimization Approach to Parameter Estimation of CES Production Function",
- Gyula Vastag (Hungary):** "Implementation of Computer-Based Integrated Production-Inventory Systems: Factors of Acceptance and Refusal",
- Marino Widmer (Switzerland) :** "FMS Performances with Perturbations" and
- Peter J. M. Wijngaard (the Netherlands):** "A Heuristic For Scheduling Problems, Especially for Scheduling Farm Operations".

The invited speakers prof. **Christer Carlsson** (Åbo Akademi, Turku, Finland), prof. **Jakob Krarup** (University of Copenhagen, Copenhagen, Denmark), prof. **Pentti Malaska** (Turku School of Economics and Business Administration, Turku, Finland), prof. **Peter Pruzan** (Copenhagen School of Economics and Business Administration, Copenhagen, Denmark), prof. **Kjell Samuelson** (Stockholm University, Stockholm, Sweden) and prof. **Len Troncale** (California State Polytechnical University, U.S.A.) gave interesting and stimulating lectures. The themes of the lectures were:

- C. Carlsson: "Decision support systems: new applications of systems theory",
- J. Krarup: "What is EURO? - Preparing for special issue of European Journal of Operational Research",
- P. Malaska: "About system models",
- P. Pruzan: "What is an ESI - and what do we anticipate from ESI IV? - Who are "we"",
- P. Pruzan: "Planning theory: reconciling complexity and rationality",
- K. Samuelson: "General systems",
- L. Troncale: "Bringing abstract systems theory to practical systems design",
- L. Troncale: "Future directions for systems science and for SGSR".

During our visits to firms our hosts and hostesses gave us talks about the firms they represented and about the special field the firm represented. In Imatran Voima Inc we had also a seminar where two lectures were given: **J. Vaurio:** "Probability Safety Assessment - Project" and **Y. Seppälä:** "Soft Systems Method".

When lectures and presentations were held the participants were divided into three working groups: 1. "Chaos, self-organization, control, development and economics" group: W. Carvajal, G. Engelen, S.-P. Kantola, T. Kinnunen, B. Kovacevic, J. César das Neves and A. Stachurski, 2. "Planning, decision making, DSS and expert systems" group: B. Golany, J. Holt, H. Kvaale, A. Ligeza, Z. Paprika and A. Rodrigues, 3. "Production and design algorithms" group: M. Båstrup, L. A. Hansen, D. Haugland, J. Leysen, Gy. Vastag, M. Widmer and P. Wijngaard. Because of the lack of time the working groups had little time to gather and work together.

However the co-operation within groups has continued by mail and with conversations in groups of two or three persons.

The Summer Institute was supported financially or by other facilities by Adax Advertising Agency, EURO: the Association of European Operational Research Societies within IFORS, the City of Turku, Finnair, the Finnish Cultural Foundation, the Finnish Operations Research Society, IBM Finland, the Ministry of Education, OKOBANK Turku, the Turku School of Economics and Business Administration, Turun Säästöpankki and the University of Turku Foundation. We also visited several Finnish firms where we received great hospitality. The firms visited were DataCity Ltd, Farnos Group Ltd, Imatran Voima Inc., Sampo Group Ltd, Union Bank of Finland, Wallac Inc. and Wärtsilä Group Ltd.

The members of the advisory committee of ESI IV, prof. **J. Pierre Brans** (Vrije Universiteit Brussel, Brussels, Belgium) and prof. Jakob Krarup, and the members of the scientific committee, prof. Peter Pruzan and prof. Kjell Samuelson, gave great and significant contribution to the Summer Institute and they also lightened the work of the organizing committee with their helpful and precious advice and smooth co-operation.

On behalf of the organizing committee (prof. Christer Carlsson, research assistant Satu-Päivi Kantola and assistant Tuula Kinnunen) of ESI IV I thank warmly EURO for all its support to the Summer Institute.



Tuula Kinnunen

Expences of the Fourth EURO Summer Institute


Accommodation	35 585,00 FIM
Meals	19 921,60 FIM
Transportation	7 422,35 FIM
Administrative costs	15 662,10 FIM
- wages	7530,00 FIM
- social security payments	365,20 FIM
- others (mailing, copies, etc.)	7 766,90 FIM
Travel costs for lecturers	7 160,20 FIM
Miscellaneous costs	<u>885,00 FIM</u>
	86 636,25 FIM

Incomes of the Fourth EURO Summer Institute

EURO, I, 1.1.1987	1500 SF =	4 435,00 FIM
EURO, II, 1.3.1987	1500 SF =	4 384,25 FIM
EURO, III, 8.5.87	5000 SF =	14 817,00 FIM
IBM-Finland	10.2.1987	5 000,00 FIM
The Ministry of Education	5.8.1987	10 000,00 FIM
The Finnish Cultural Foundation	4.5.1987	30 000,00 FIM
Finnair	16.6.1987	1 000,00 FIM
The City of Turku	8.6.1987	8 000,00 FIM
OKOBANK Turku	8.7.1987	1 000,00 FIM
Turun Säästöpankki	30.6.87	2 000,00 FIM
Adax Advertising Agency	4.9.87	3 000,00 FIM
The University of Turku Foundation	4.9.87	3 000,00 FIM

86 636,25 FIM

HELSINKI, JANUARY 5TH 1988
FINNISH OPERATIONS RESEARCH SOCIETY


HARRI MÄKELÄ

FINAL PROGRAMME

FOURTH EURO SUMMER INSTITUTE

**Turku, Finland
June 5 - 20, 1987**

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| June, 5 | Arrival at the hotel Rantasipi Ikituuri by 18.00 at the latest. |
| Friday | 18.45 Departure to Rymättylä.
19.45- Chr. Carlsson: Welcome to Finland and
to ESI IV
Welcome party. |
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| June, 6 | 8.00-9.00 Breakfast
9.00-10.45 Invited lecture: P. Pruzan |
| Saturday | 10.45-11.30 Coffee/tea
11.30-13.00 Invited lecture: J. Krarup
13.00-14.30 Lunch
14.30-17.45 Walking tour in Rymättylä.
17.45 - : Dinner and Sauna party. |
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| June, 7 | 9.00: Breakfast.
Free |
| Sunday | 11.30-13.30 Lunch
14.00-15.30 Departure to Turku and tour in Turku.
17.00-19.00 Dinner. |
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- June, 8** 7.00-8.30 Breakfast.
9.00-10.30 Invited lecture: Kj. Samuelson
Monday 10.30-11.15 Coffee/tea
11.15-12.45 Seminar of G. Engelen (Belgium)
13.00-15.00 Lunch
15.00-16.30 Seminar of Z. Paprika (Hungary)
16.30-17.00 Coffee/tea
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- June, 9** 7.00-8.30 Breakfast.
9.00-10.30 Seminar of T. Kinnunen (Finland)
Tuesday 10.30-11.15 Coffee/tea
11.15-12.45 Seminar of J. Leysen (Belgium)
13.00-14.30 Lunch
14.15-15.45 Seminar of J.C. das Neves (Portugal)
15.45-16.00 Coffee/tea
16.00-16.30 Invited lecture: P. Malaska
16.30-18.00 Invited lecture: L. Troncale
18.30-19.30 Reception of the City of Turku
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- June, 10** 7.00-8.30 Breakfast.
9.00-10.30 Seminar of W. Carvajal (England)
Wednesday 10.30-11.00 Coffee/tea
11.00-12.30 Seminar of A. Stachurski (Poland)
12.45-14.15 Lunch
14.15-15.45 Seminar of D. Haugland (Norway)
16.00-16.30 Coffee/tea
18.00-20.00 Visit to Data-City Limited
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- June, 11** 7.00-8.30 Breakfast.
9.00-10.30 Seminar of P.M.J. Wijngaard (The Netherlands)
Thursday 10.30-11.00 Coffee/tea
11.00-12.30 Seminar of B.D. Kovacevic (Yugoslavia)
12.45-14.15 Lunch
14.15-15.45 Seminar of B. Golany (Israel)
16.00-18.00 Visit to Wärtsilä
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June, 12	7.00-8.45 Breakfast
Friday	9.00: Departure to Helsinki 11.30-15.00 Visit to Imatran Voima 15.00-20.00 Visit of Helsinki 23.00: Arrival at Turku

June, 13	7.00-10.00 Breakfast.
Saturday	10.30-12.00 Seminar of M. Båstrup (Denmark) 12.00-14.00 Lunch 14.00-15.30 Invited lecture: L. Troncale 17.00-23.30 Party at Tuula's place

June, 14	8.00-10.00 Breakfast Free
Sunday	12.30-14.00 Lunch 14.00-17.00 Visit to the Handicraft Museum

June, 15	7.00-8.30 Breakfast.
Monday	9.00-10.30 Seminar of J. Holt (England) 10.30-11.15 Coffee/tea 11.15-12.45 Seminar of A.J.L. Rodrigues (Portugal) 13.00-14.30 Lunch 14.30-16.00 Seminar of H. Kvaale (Norway) 16.00-16.30 Coffee/tea 16.30-18.00 Seminar of A. Ligeza (Poland)

June, 16	7.00-8.30 Breakfast.
Tuesday	9.00-12.00 Visit to Wallac 12.15-13.30 Lunch 13.30-15.00 Seminar of M. Widmer (Switzerland) 15.00-15.30 Coffee/tea 15.30-17.00 Seminar of G. Vastag (Hungary) 17.30-19.30 Visit to Farmos Group Limited

June, 17	7.00-8.30 Breakfast. 9.00-10.30 Seminar of L. A. Hansen (Denmark)
Wednesday	10.30-11.15 Coffee/tea 11.15-12.45 Seminar of S-P. Kantola (Finland) 13.00-15.00 Lunch 15.00-16.30 Invited lecture: Chr. Carlsson 16.30-17.00 Coffee/tea 17.30-19.30 Visit to Sampo Group Limited

June, 18	7.00-8.30 Breakfast. 9.00-10.30 Working groups
Thursday	10.30-11.15 Coffee/tea 11.15-12.00 Working groups 12.00-13.45 Lunch 13.45: Departure to Union Bank of Finland 14.00-14.45 Plenary session 14.45-15.15 Coffee/tea 15.15-17.00 Plenary session 17.00-19.00 Evening meal in Union Bank of Finland

June, 19	7.00-8.30 Breakfast. 9.00-10.30 Invited lecture: P. Pruzan
Friday	10.30-11.15 Coffee/tea 11.15-12.45 Working groups 13.00-14.30 Lunch 14.30-15.00 Closing session: Chr. Carlsson and P. Pruzan 16.30-19.00 Boat tour to Naantali 19.00- Midsummer night's feast

June, 20	7.00-10.00 Breakfast 12.00-14.00 Farewell lunch
Saturday	Departure of participants

June, 21	8.00-10.00 Breakfast Departure of participants
Sunday	
