

seminars

PHYSICS III SEMINARS

Monday, November 2
11.00
Theory Conference Room

"Experimental results on μp , πp , μ^4 He atoms"

E. Polacco / CERN-Pisa

Monday, November 9
11.00
Theory Conference Room

"Recent developments in the Glauber Theory"

C. Wilkin / UC-London

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CERN COMPUTER SEMINARS

Thursday, November 5
14.30
Council Chamber

"Representation Techniques for Data Structures"

J.J. Duby / IBM (ESRI)

Abstract : Four fundamental problems appear in succession when dealing with data structures : definition, representation, allocation and processing. These problems are not independent but the speaker will mainly consider representation problems in the light of the two basic approaches : addressing by index, and addressing by contents.

Each approach will be discussed introducing the concepts and techniques (list structures, tree structures, hash-coding, multiple hits representations, etc.), and their application to fields such as algebraic manipulation, information retrieval and sorting.

Finally, the joint application of both approaches to plex structures in data base systems will be considered.

Tuesday, November 10
14.30
Auditorium

"The Ampex TERABIT Memory System"

E.O. Salbu / Ampex

Abstract : It is hoped that on-line memory systems with a capacity equivalent to tens of thousands of magnetic tapes will soon relieve some of the storage problems currently experienced around large computer systems. Several such systems are currently under development using different recording techniques and media (laser, photographic, video).

Mr. Salbu will describe the Ampex TERABIT memory system being developed under a U.S. government contract to provide up to 2.5×10^{12} bits of on-line storage capacity using two inch wide magnetic tape and video recording techniques.

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CERN APPLIED SCIENCE SEMINAR

Thursday, November 5
14.30
MPS Conference Room

"On-line optimization of the proton synchrotron closed orbit at injection"

A. Daneels / SI Division

Abstract : A control strategy for the on-line optimization of the CERN Proton Synchrotron within the constraints of the every-day operational requirements will be described. It will be shown how the control vectors are designed.

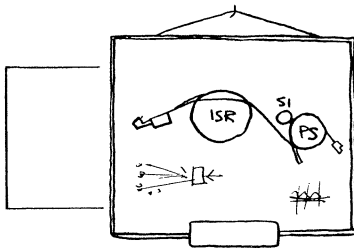
Emphasis is laid on the importance of including appropriate statistical treatment of the measurements within the strategy, which has been successfully used for starting up the Synchrotron.

L'INSTITUT NATIONAL
GENEVOIS

organise une QUINZAINE DE L'INFORMATIQUE du 26 octobre au 8 novembre 1970 :
4 conférences, 14 colloques spécialisés, 1 exposition thématique, 1 exposition et démonstrations de 10 constructeurs appartenant à l'industrie des ordinateurs, 15 visites d'entreprises ou organisations. Présentation de films.

L'ensemble des manifestations est organisé dans les locaux du Musée d'Art et d'Histoire, salle des expositions temporaires, (rez-de-chaussée) et salle des conférences (sous-sol), entrée boulevard Jaques-Dalcroze, Genève.

Un certain nombre de programmes détaillés est à disposition au Service d'Information du Public ou au Secrétariat permanent de la quinzaine (Musée d'Art et d'Histoire). (Tél. 26.17.00).



enseignement

ACADEMIC TRAINING

Tuesday, November 3
11.00
Auditorium

APPLIED MATHEMATICS

"Properties of solutions of ordinary non-linear differential equations", by I. Gumowski.

This series of about 8 lectures will be given on Tuesdays, in November and December 1970.

The subject matter will be chosen mainly from the complex of ideas studied by Poincaré, Liapunov, Andronov-Pontryagin and Krylov-Bogoliubov*).

The following topics will be briefly considered :

Qualitative difference between solutions of linear and non-linear differential equations - Characterization of the function defined by the general solution of a differential equation - Neighbourhood of two particular solutions leading to the notion of stability - Various definitions of stability - First method of Liapunov : characterization of solutions by means of characteristic numbers - Second method of Liapunov : use of redundant information - Method of the Poincaré small parameter - Generating equations - Sensitivity of solutions to a small change of parameters - Relationship between a solution of a differential equation and of its discrete approximation.

Examples will be provided from the theory of differential equations of the second order. The notions discussed find frequent applications in the analysis of the motion of accelerated particles.

* / Sample texts available in English are : N. Minorsky, "Non-linear oscillations" (Van Nostrand); N. Minorsky, "Introduction to non-linear mechanics" (Ann Arbor); A.A. Andronov, A.A. Witt, S.E. Khaikin, "Theory of oscillations" (Pergamon Press).

The 1892 paper of Liapunov has been reprinted in French in the Princeton University Press collection on non-linear differential equations.