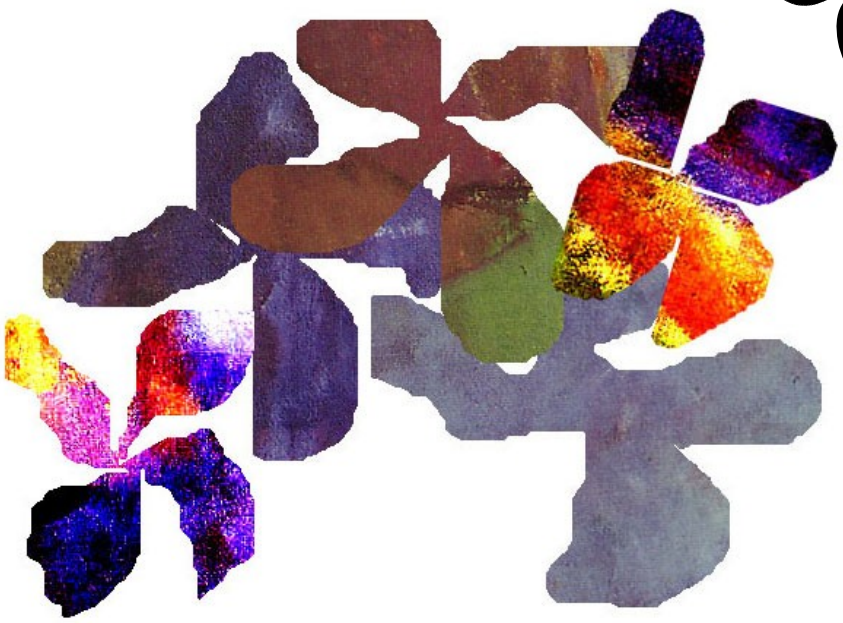
On the Wings of Physics



a man who married a

and was proud of it

Niels Bohr

the young were expected to entertain the seniors

Blegdams

Faust

Characters

The Lord: Bohr

Mefisto Pauli

Blegdams

Faust

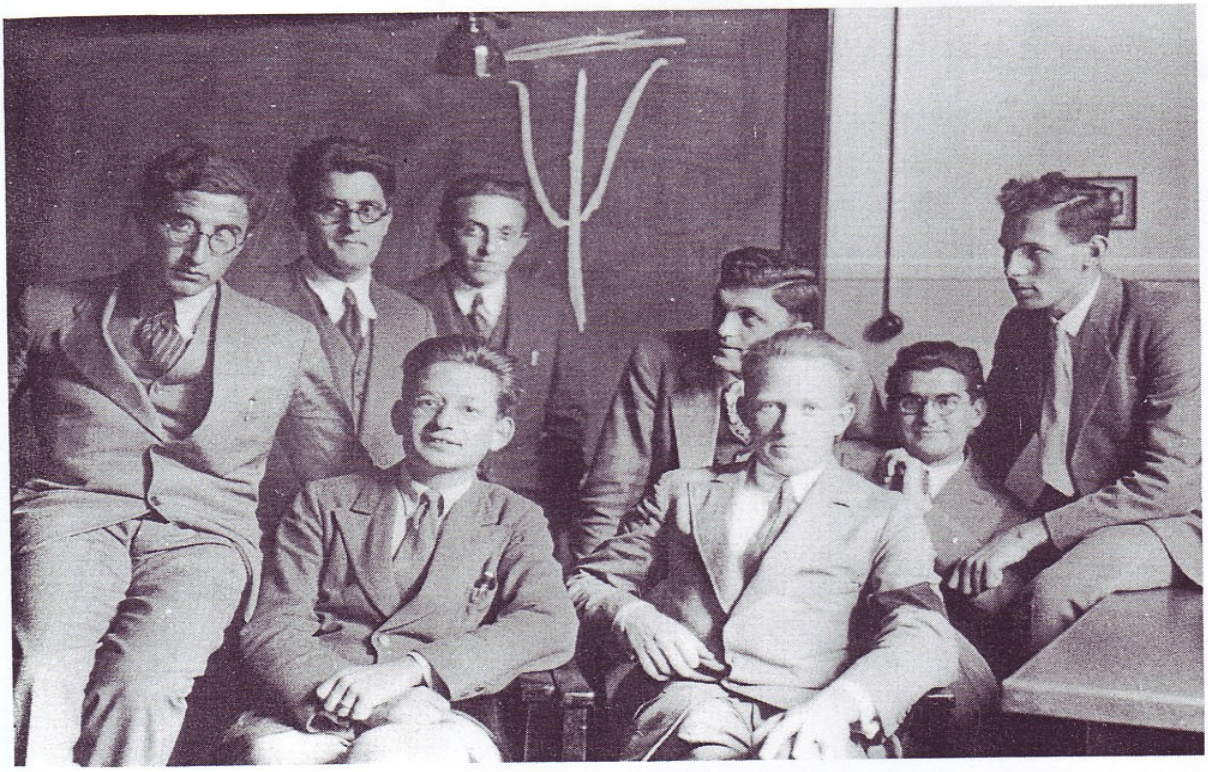
Characters

The Lord

Mefisto

and, of course, the

a beatiful Danish



Victor Weisskopf

only 22 years old and

doesn’t know that

great scientist

great humanist

prominent world citizen

DG of CERN, ...

large influence on

I have always had a great admiration for Viki.

I consider this friendship as a great privilege and I cherish its memory.

Dear colleague,

I had the fortune to read attentively your words caused by the passing of Dr V Weisskopf. I am sure that if he had read them, wherever he may be now, he would have felt happy to know what impression he left. ....

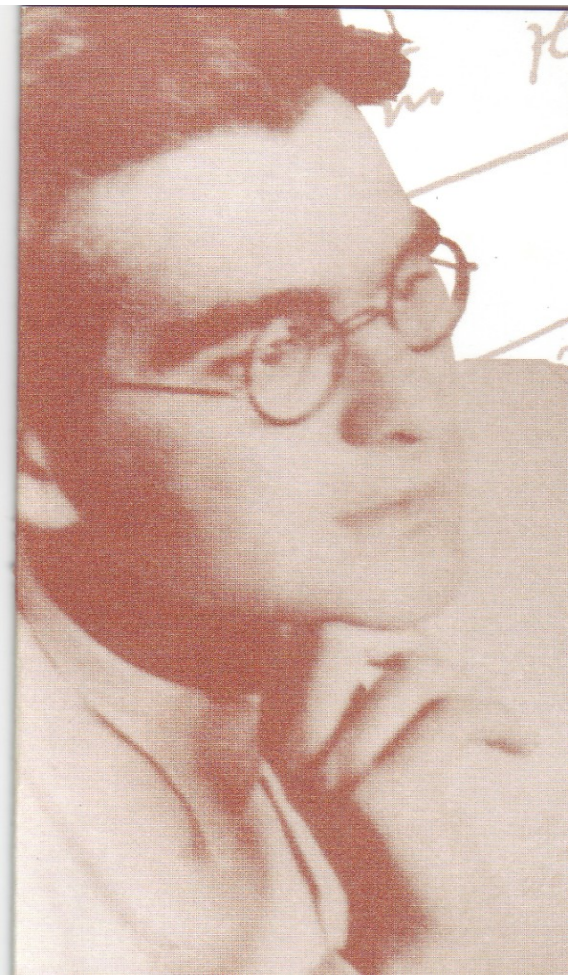
I did not feel at all that I was overdoing anything when writing about Viki. I was simply speaking with my heart, as he had earlier asked me to do when he had wished me to speak in Vesancy after the death of Ellen ...

enormous talent

writes

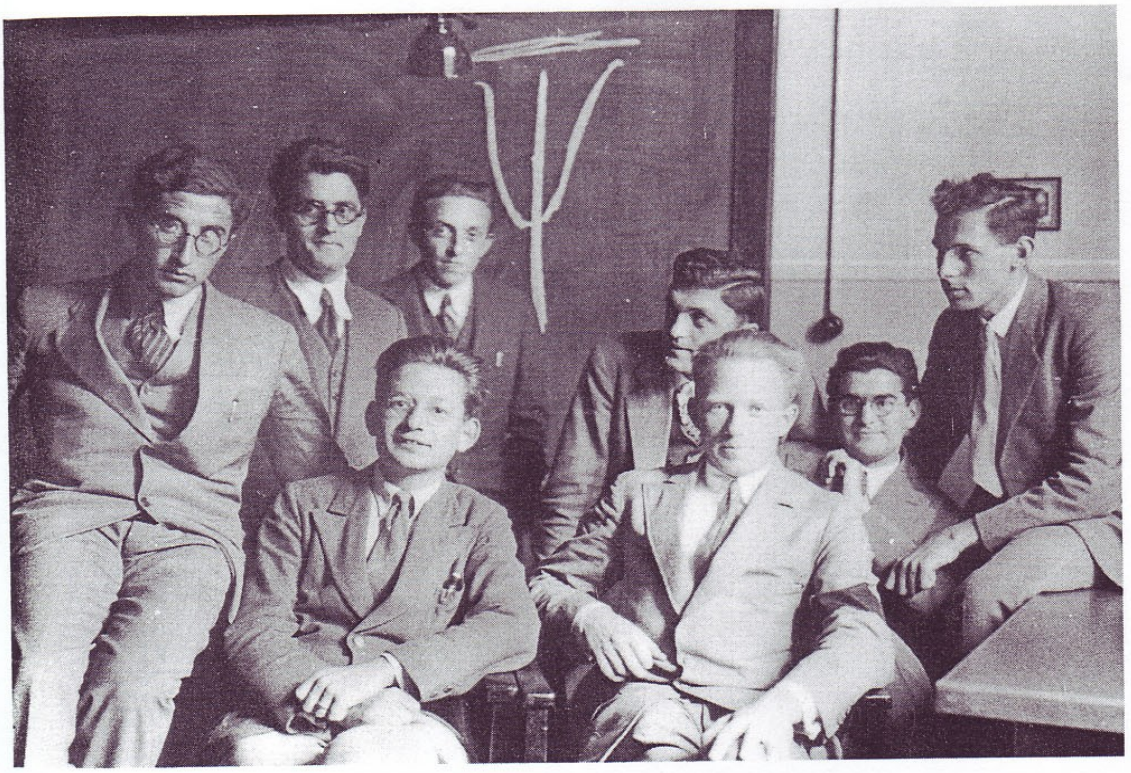
Beautifully

Fast



a faint smile

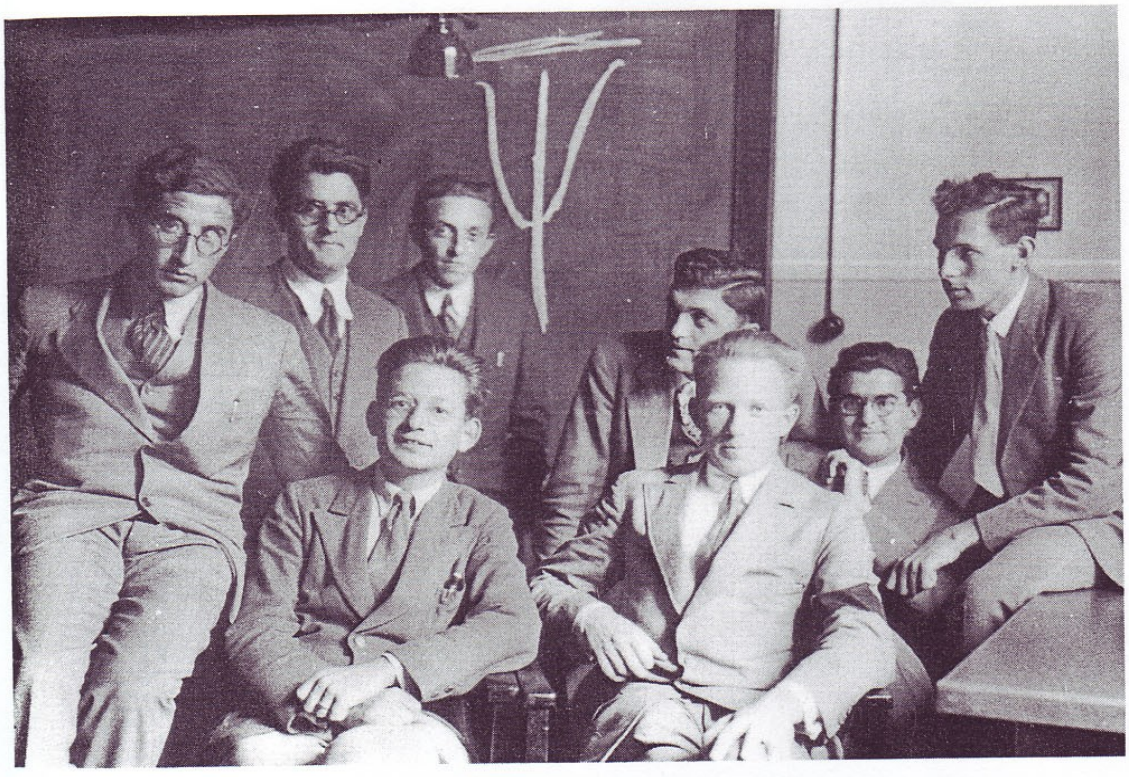
and a nod



I have been very fortunate to have Gian Carlo Wick as my thesis advisor.

a man of great culture with a profound humanism

(Bohr, Sommerfeld)



the ”old man” Heisenberg + youth

Maurice

was a

multi-dimensional

person

Maurice

the editor of

scientific journals

1968-1985

Maurice

the Head of the

Theory Division

a few words about

Maurice

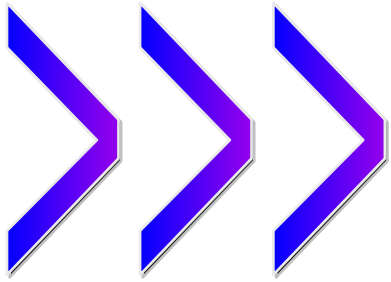
the

Researcher

First paper, 1958 much later used to determine the spin of

the next = JW

One great paper



a thousand ordinary ones

$$P\,\psi_{p\lambda_1\lambda_2} = \eta_1\eta_2\,(-1)^{s_1+s_2-\lambda_1+\lambda_2}\,e^{i\pi J_y}\psi_{p,-\lambda_1,-\lambda_2}\,. \qquad (40')$$

We now apply the operator P to an angular-momentum state, Eq. (16), remembering that P commutes with the rotation operators

$$P\,|JM\lambda_1\lambda_2\rangle = \eta_1\eta_2(-1)^{s_1+s_2-\lambda_1+\lambda_2}\int dU\mathfrak{D}^{*}_{M\lambda}(\alpha\beta\gamma)R_{\alpha\beta\gamma}R_{0,-\pi,0}\psi_{p,-\lambda_1,-\lambda_2}\,.$$

We notice that the equation

$$R_{\alpha\beta\gamma}\,R_{0,-\pi,0} = R_{\alpha'\beta'\gamma'}$$

defines an element $\alpha'\beta'\gamma'$ in such a way that the transformation from $\alpha\beta\gamma$ to $\alpha'\beta'\gamma'$ preserves the volume element in group space,[6] i.e., $dU = dU'$. Furthermore, using the known value of $d^{J}(\pi)$, one has

$$\mathfrak{D}_{M\lambda}(\alpha\beta\gamma) = \sum_{\mu}\mathfrak{D}_{M\mu}\,(\alpha'\beta'\gamma')\mathfrak{D}_{\mu\lambda}\,(0\,\pi\,0) = (-1)^{J-\lambda}\mathfrak{D}_{M,-\lambda}(\alpha'\beta'\gamma').$$

Collaborators

- JACOB, M (264)
- PUECH, A (21)
- DURU, C (15)
- ANDERSSON, S (13)
- WU, TT (12)
- GAUDY, D (10)
- LIDIN, S (10)
- ITZYKSON, C (9)
- SLANSKY, R (7)
- THOMAS, S (7)
- LANDSHOFF, PV (6)
- SUBRAMANIAM, V (6)
- VARUGHESE, KT (6)
- BATAILLE, B (5)
- DAUNE, M (5)
- RASHED, MS (5)
- AL-DIRBASHI, OY (4)
- BERGER, EL (4)
- HORGAN, R (4)
- LASSERRE, Y (4)
- POKORSKI, S (4)
- BENOIT, H (3)
- BHATTACHARYA, PK (3)
- FALSTER, R (3)
- FINKELST.J (3)
- FRANCIS, B (3)
- JOACHIM, J (3)
- LARSSON, K (3)
- MAHOUX, G (3)
- NARMADA, S (3)
- PANDEY, D (3)
- PICHLER, P (3)
- WEYERS, J (3)
- WU, CC (3)
- ABLORDEPPEY, SY (2)
- ABOUL-ENEIN, HY (2)
- AL-HASSNAN, Z (2)
- AUCLAIR, JM (2)
- BALL, JS (2)
- BARTON, DHR (2)
- BAYLAC, G (2)
- BERMAN, SM (2)
- BESSIS, D (2)
- BLOSS, WJ (2)
- CARSLAW, N (2)
- CASADEBAIG, J (2)
- CASADEBAIGLAFON, J (2)
- CASSANAS, G (2)
- CHLIAPNI.P (2)
- CONTI, C (2)
- CORNARA, M (2)
- CRAIGIE, NS (2)
- CZYZEWSK.O (2)
- ELLIS, J (2)
- FOGDEN, A (2)
- FREUND, L (2)
- GAMBARO, D (2)
- GANESHPURE, PA (2)
- GRAVESTOCK, T (2)
- HEARD, DE (2)
- HIDAKA, K (2)
- HORN, D (2)
- JOSE, S (2)
- KHAN, SI (2)
- LARSSON, AK (2)
- LEE, JD (2)
- MONKS, PS (2)
- MOREL, A (2)
- OLMO, M (2)
- ORTIGOSA, C (2)
- PAGANI, M (2)
- PELLECUER, J (2)
- PENEVA, B (2)
- PILLING, MJ (2)
- RIZK, S (2)
- RYSSEL, H (2)
- SABATIER, R (2)
- SATISH, S (2)
- SIVARAM, S (2)
- SLANY, J (2)
- SMITH, SC (2)
- SONAGLIO, D (2)
- SUBRAMANNIAM, V (2)
- TERASAKI, O (2)
- VAROQUI, R (2)
- WEISS, E (2)
- WICK, GC (2)
- ZHU, XY (2)
- ABRAMOVI.M (1)
- ABRAMOVICI, B (1)
- AL-AHAIDIB, L (1)
- AL-AHAIDIB, LY (1)
- AL-AMOUDI, M (1)
- AL-ODAIB, A (1)
- AL-QAHTANI, K (1)
- AL-SAYED, MM (1)
- AL-SHAHWAN, S (1)
- ALBAYATI, Y (1)
- ALBERIUS, PCA (1)
- ALFREDSSON, V (1)

(show fewer)

T. T. Wu (12)
C. Itzykson (9)
R. Slansky (7)
P. V. Landshoff (6)
E. L. Berger (4)
R. Horgan (4)
S. Pokorski (4)
J. Finkelstein (3)
G. Mahoux (3)
J. Weyers (3)
C. C. Wu (3)

+others (2) and (1)

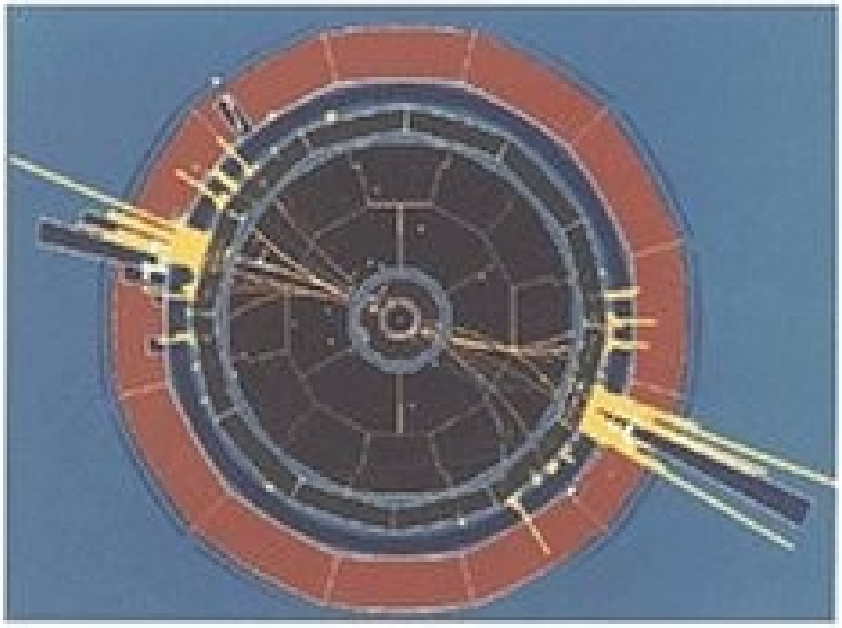
Tai Wu
impressed

by 

picking up a sentence
after some

MAURICE JACOB

AU CŒUR DE LA MATIÈRE



EDITIONS
ODILE JACOB
SCIENCES

Je voudrai dédier ce livre à la mémoire de deux amis, Claude Itzykson et Richard Slansky qui ont travaillé avec moi comme feunes chercheurs ....

Maurice

in the

Wings

Physics research is a passion which is very greedy on time.

Getting involved in ”wing activities” often results from a lack of ability to say no. This was certainly the case for me.

reluctant, …

Well, I nevertheless did accept and, in retrospect, I do not regret it.

We are very grateful to you

Maurice is being modest

Due to his exceptional talent

Very intelligent

Intelligence is a person's ability to adapt to the environment in all aspects of his or her life

Maurice

didn't adapt but CREATE

a new

Maurice

Visionary & dedicated

Identified the goal and a path leading to it

& ACTION

Maurice

appreciated

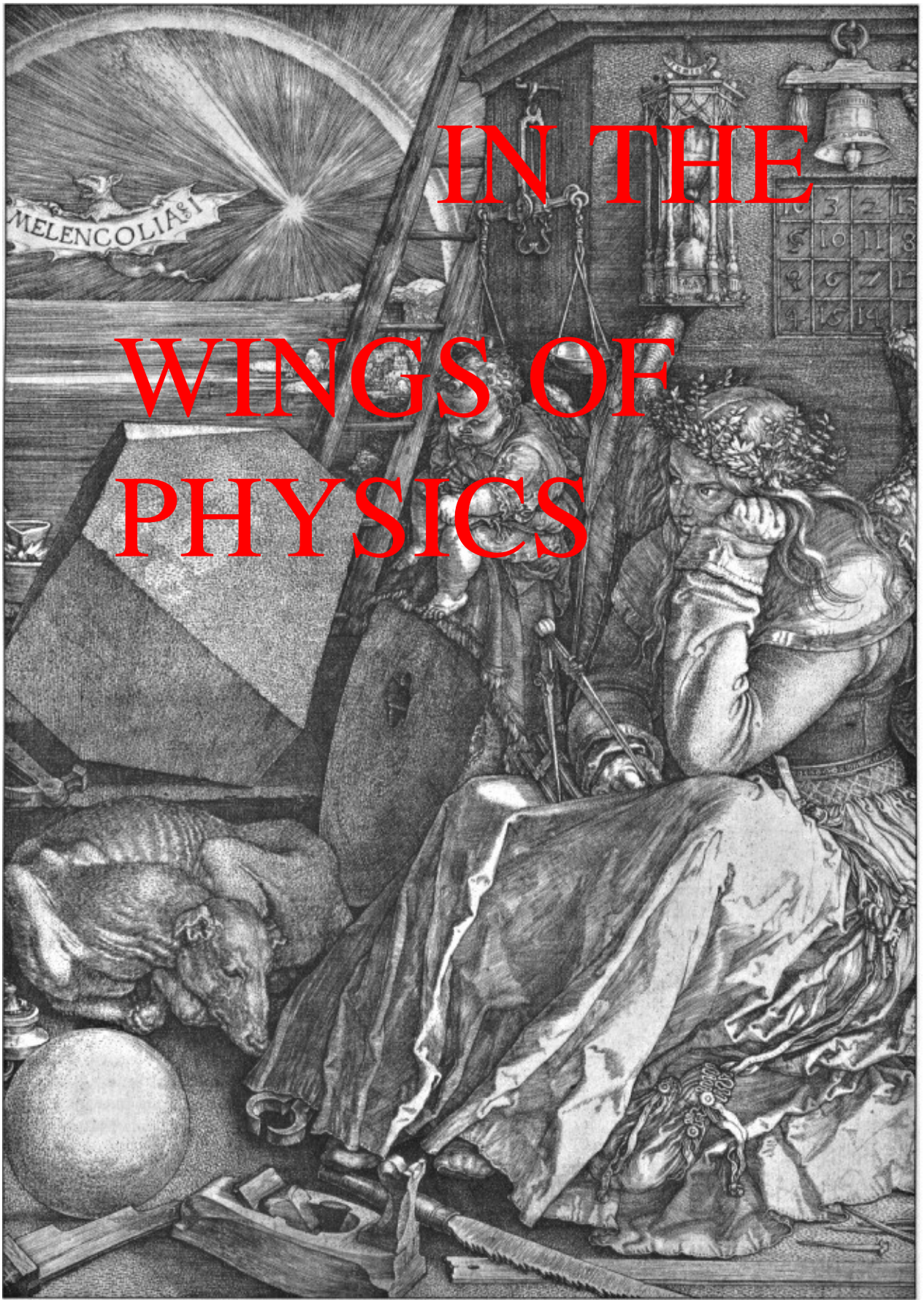
Albrecht D., ...

loved quotations

+”outreacher”

Classical optics

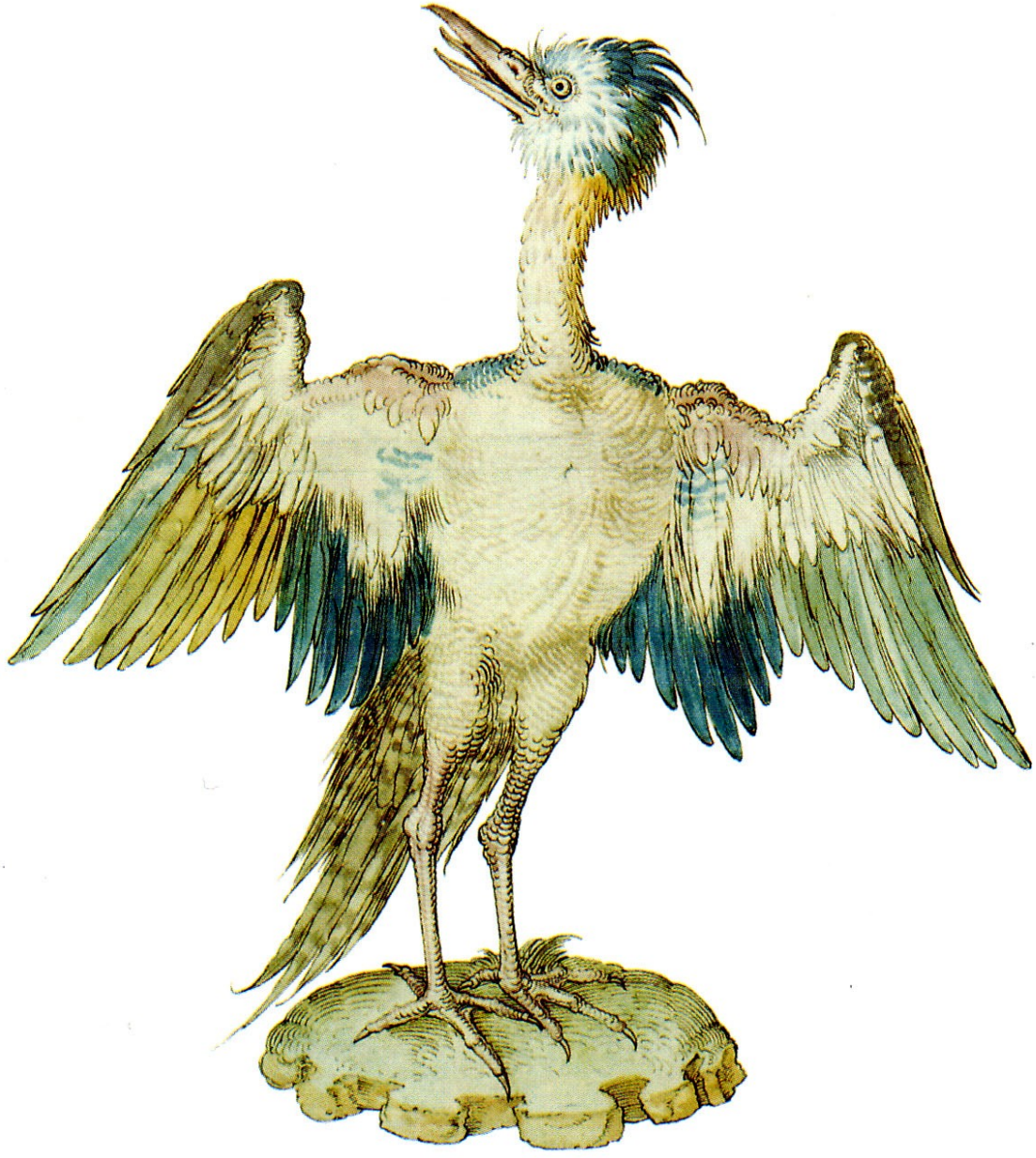
topology

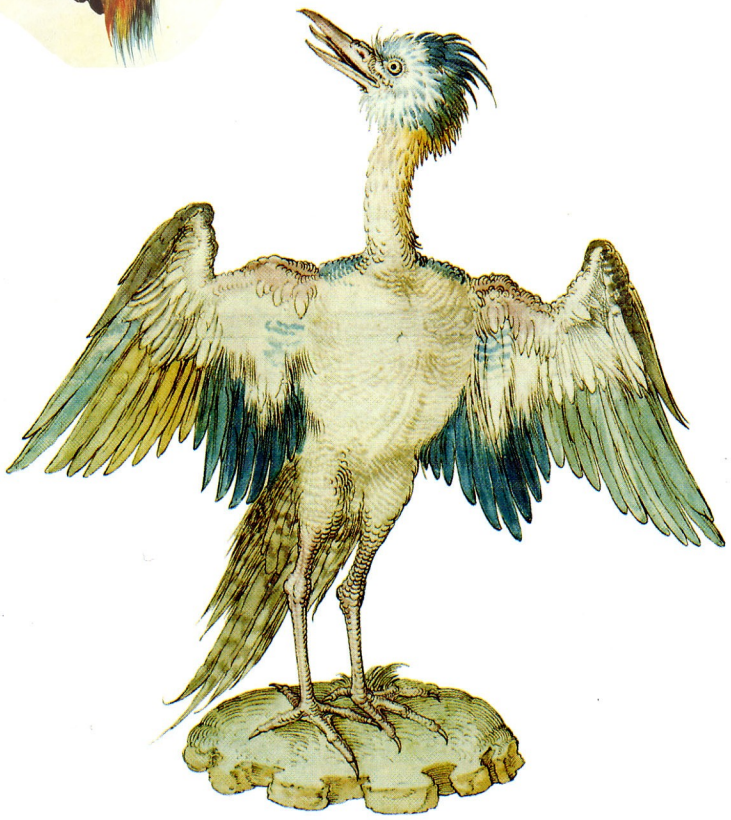


IN THE WINGS OF PHYSICS

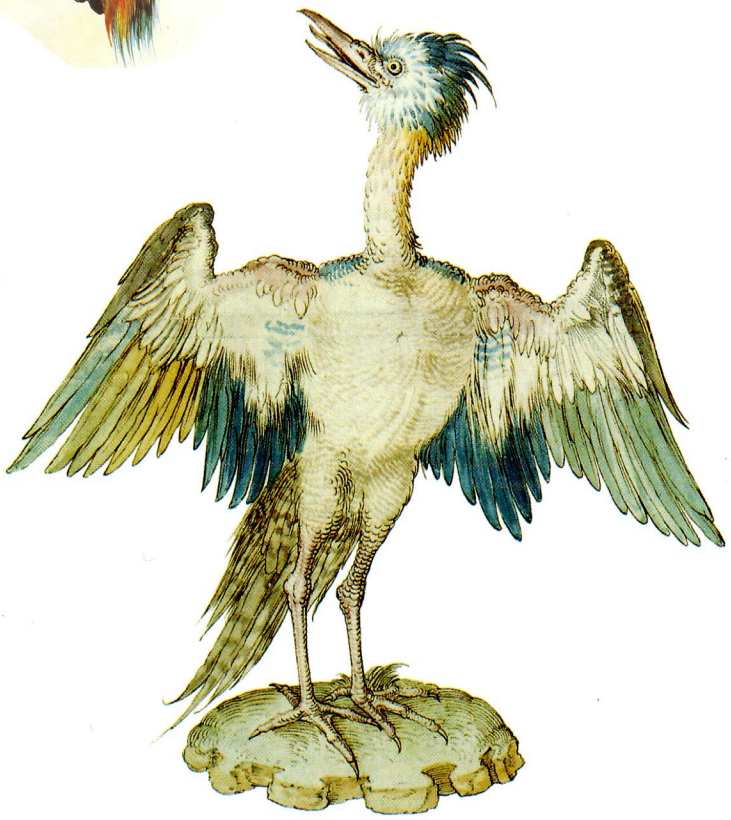

MELENCOLIA I

"Melancolia"
can be seen as a
magnificent
allegoric illustration of
Physics
and the more so of the
activities which
accompany it in its
wings





not in

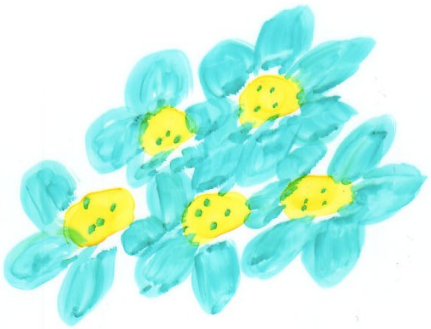


but

ON

critics could say

quotation



antiquotation

Maurice clever way

Maurice

the

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Prof. J. Nilsson	(University of Göteborg)

Rättvik 1967

CONTENTS

Volume I (this volume)

1. THE DISCRETE SYMMETRIES P, C AND T — Jan Nilsson

2. WEAK INTERACTIONS AND HIGHER SYMMETRIES — Maurice Jacob

Volume II

3. HIGH-ENERGY PHENOMENOLOGY AND REGGE POLES — B. E. Y. Svensson

Volume III

4. QUANTUM NUMBERS OF BOSON RESONANCES — Gerson Goldhaber

5. TOPICS IN BARYON RESONANCES — G. Giacomelli

Volume IV

6. BEAM OPTICS — K. G. Steffen

7. K^{O} DECAY — M. Vivargent

8. POLARIZED TARGETS IN PARTICLE PHYSICS — Maurice Jacob

LIST OF PARTICIPANTS

Continued until well after his retirement

Maurice

the

plenary speaker

Is there any simple relation between

Toller's daugthers and Veneziano's daugthers?

Jacob: No, ...

Lund

1969

there were hardly any quarks

All hadrons are composed of quarks which have a very high mass, say 10^{6} GeV

there was
no charm
no beauty

....
no tau
no glue, no W, no Z

It has been just wonderful to live through a time when a new level in the structure of matter, the quark level, was discovered and explored

the

Great Catalyst

bringing people together

ISR DISCUSSION MEETINGS

between

EXPERIMENTALISTS AND THEORISTS

Here are summaries of the two introductory talks of the preceding discussion session on "Correlations at wide angles". They correspond to a general discussion of correlations at wide angles and asymptotic energies by M. Toller and new results from the Pisa-Stony Brook collaboration by D. Green, respectively.

The next meeting will be on

Thursday, 7 December 1972

and the topic under discussion will be

"Production at large transverse momentum"

Distribution limited to 30 copies within CERN

M. Jacob - Div: TH, Tel. 2414

1. Two-body correlations (1972)
2. Large transverse momentum phenomena (1972)
3. Scaling and the approach to scaling (1973)
4. Correlation at wide angles (1973)
5. Diffraction excitation (1973)
6. Elastic scattering and total cross-sections (1973)
7. Large transverse momentum phenomena (1973)
8. Correlations involving a fast particle (1974)
9. Correlations at wide angles (1974)
10. Large transverse momentum phenomena (1974)
11. Diffractive effects (exclusive aspects) (1974)
12. Leptons at the ISR (1974)
13. The structure of large transverse momentum events (1975)
14. More on the structure of large transverse momentum events (1975)
15. Where is Drell-Yan ? (1975)
16. Structure of large p_T events (1975)
17. Correlations among large p_T particles (1975)
18. The double Pomeron mechanism (1976)
19. Large p_T phenomena (1976)
20. Lepton-lepton pair (and J/ψ) production (1977)
21. The study of jet structure (1977)
22. The double Pomeron process (1977)

This series terminated with the 1977 ISR Workshop.

76. The second ISR workshop (1977)

detailed written report

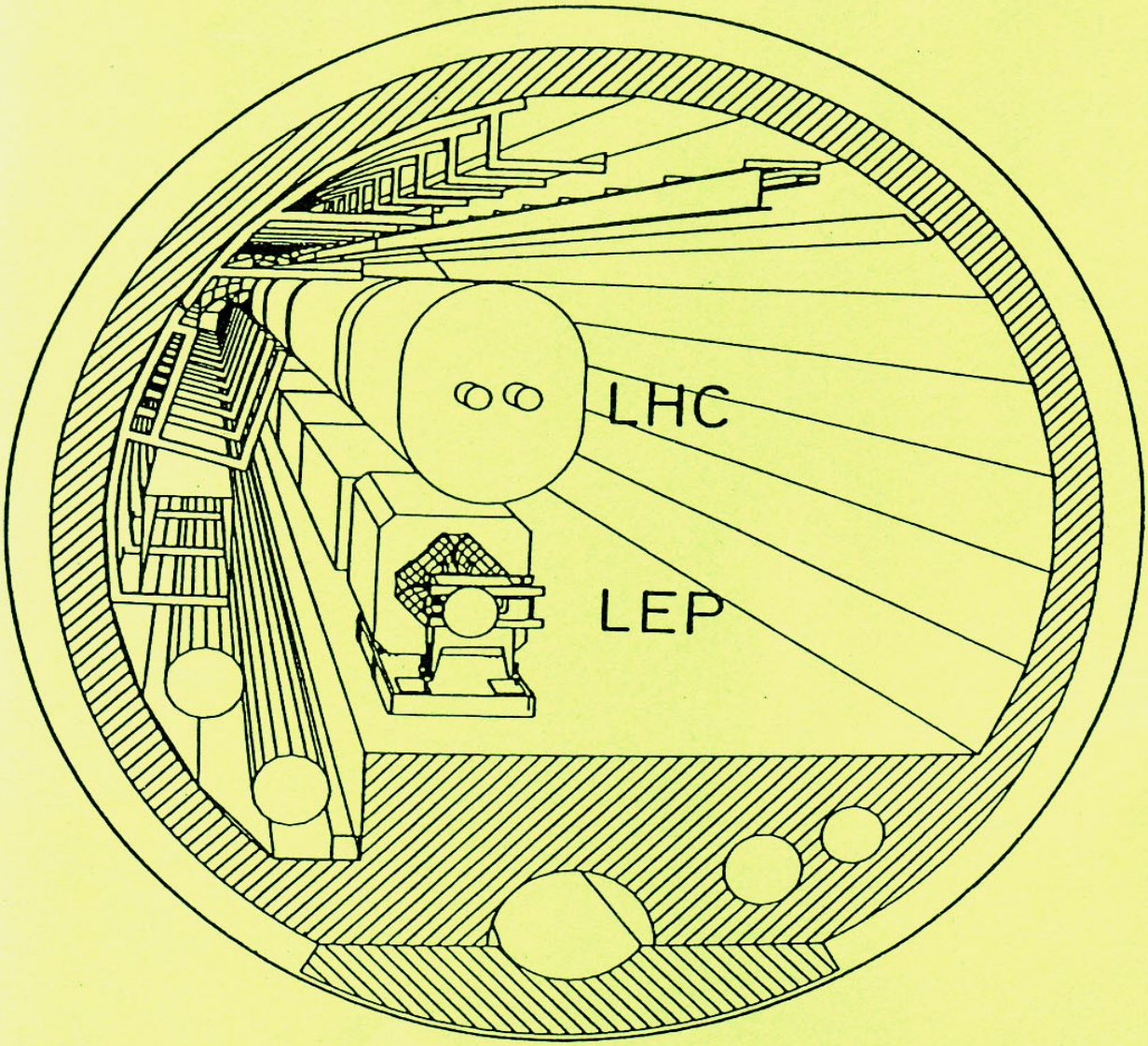
was a

Superstar

in

Scandinavia

ECFA 84/85
CERN 84-10
5 September 1984



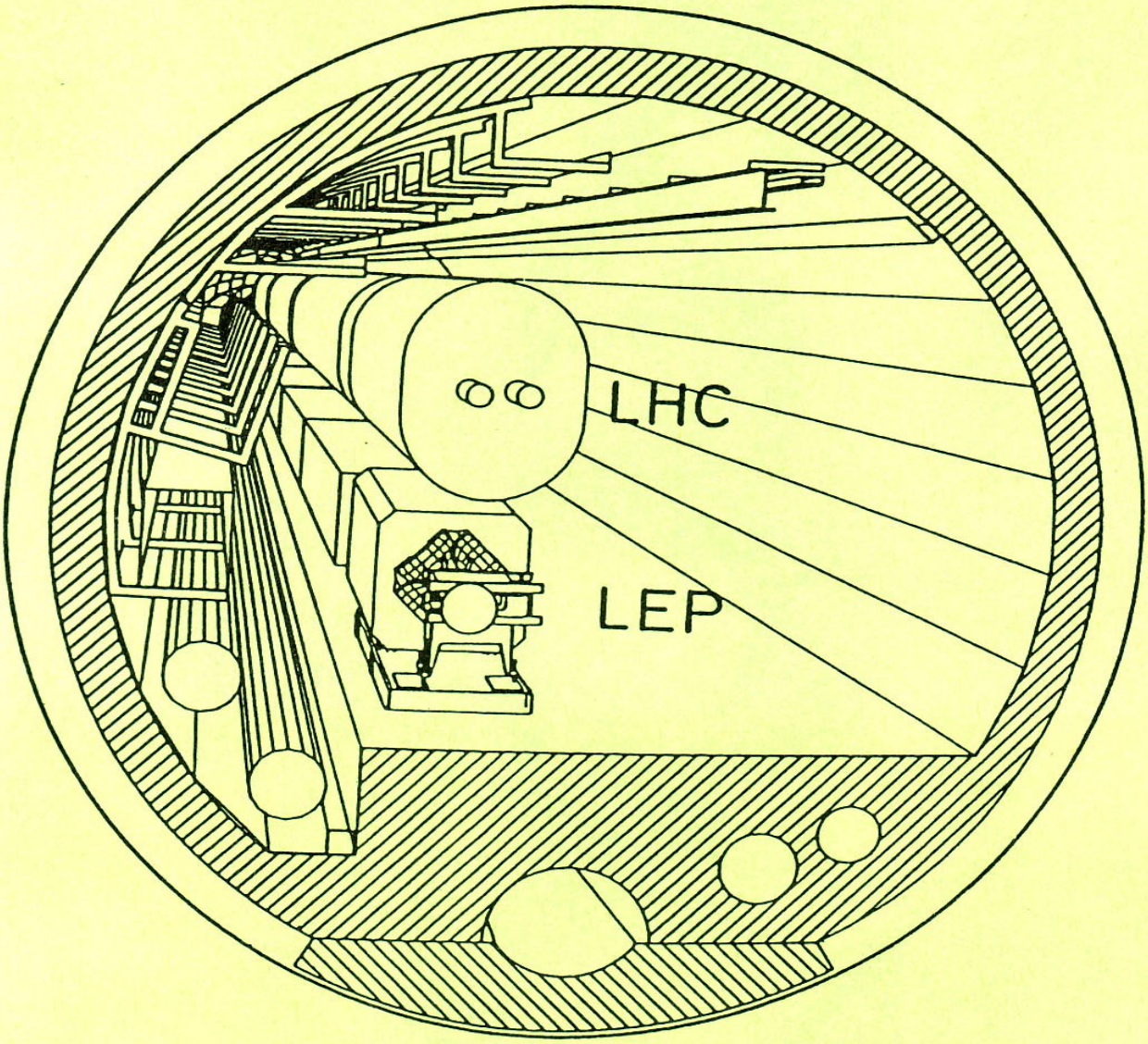
LARGE HADRON COLLIDER IN THE LEP TUNNEL

Vol. I

PROCEEDINGS OF THE ECFA-CERN WORKSHOP

held at Lausanne and Geneva,
21-27 March 1984

ECFA 84/85
CERN 84-10
5 September 1984



LARGE HADRON COLLIDER IN THE LEP TUNNEL

Vol. II

PROCEEDINGS OF THE ECFA-CERN WORKSHOP

held at Lausanne and Geneva,
21-27 March 1984

...it was decided to publish in two volumes according to the reception date

make the material available at the earliest possible date

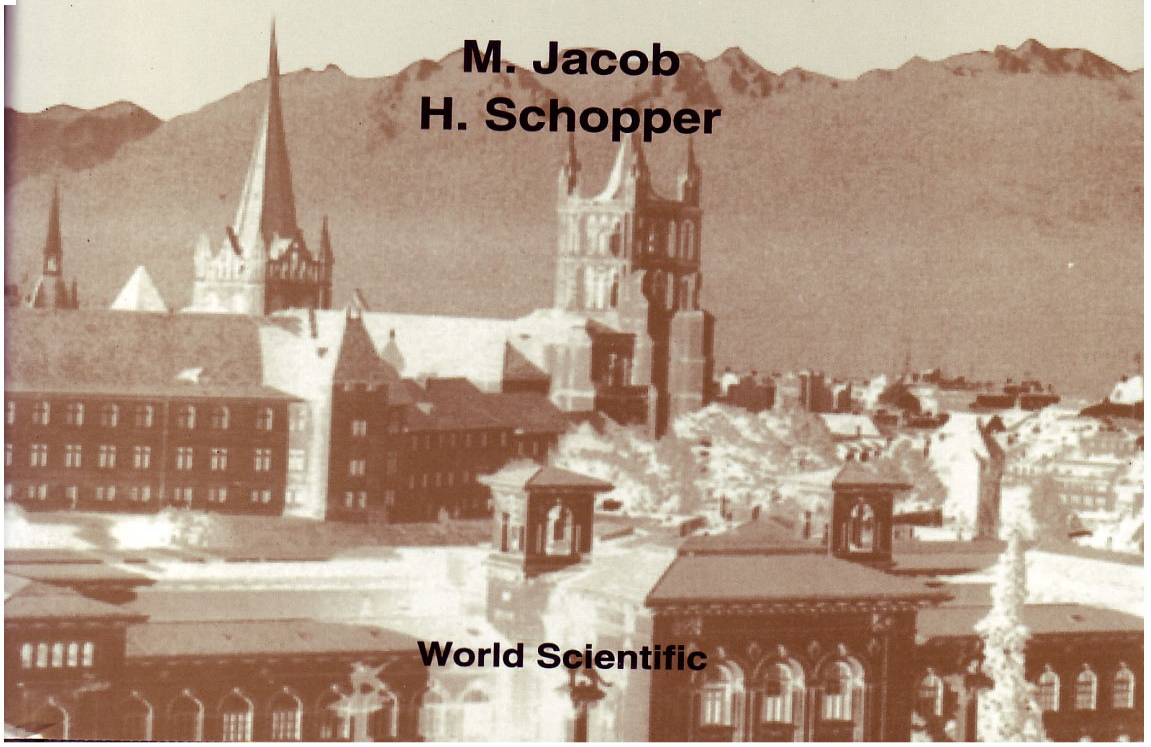
5th EPS International Conference

LARGE FACILITIES IN PHYSICS

University of Lausanne, Dorigny, Switzerland
12–14 September 1994

Editors

M. Jacob
H. Schopper



World Scientific

Large and small science

Promoting opportunities together

PANELISTS

K.H. Chang, FOM, Utrecht
J.-M. Gago, LIP, Lisbon
C. Jarlskog, Lund (Chair.)
A. Santoro, CBPF, Rio di Janeiro
P. Wyder, MPI-CNRS, Grenoble
Y. Yamaguchi, IUPAP, Tokyo

Maurice

the leader,

chairman

president

serious, dedicated

not like some other ....

Energy and

persistence

conquer all things

BF

By failing to prepare,
you are preparing to fail

Maurice

in

SFP

French Physical Society

1984 -1986

Powerful societies

USA

D, NL, UK

not in France

individualism is felt as a part of the national culture

Maurice believed in prizes

They force people to better know their colleagues in other branches of physics

The Gentner-Kastler-Prize

Société Francaise de Physique (SFP) und Deutsche Physikalische Gesellschaft (DPG)

Conferences on Quark Matter

SFP

visited the minister four times

+ two more

Maurice

realized that the

modern man is not capable of

receiving too many

”commandments”

max = 3

3 ”commandments”

- maintain a decent influx of young people
- avoid important fluctuations in the yearly research budget
- avoid too strong dichotomy between the so-called pure and applied (excellence)

The PM took note and included them in his opening speech

We were all

Normaliens

weren’t we?

Maurice & eps

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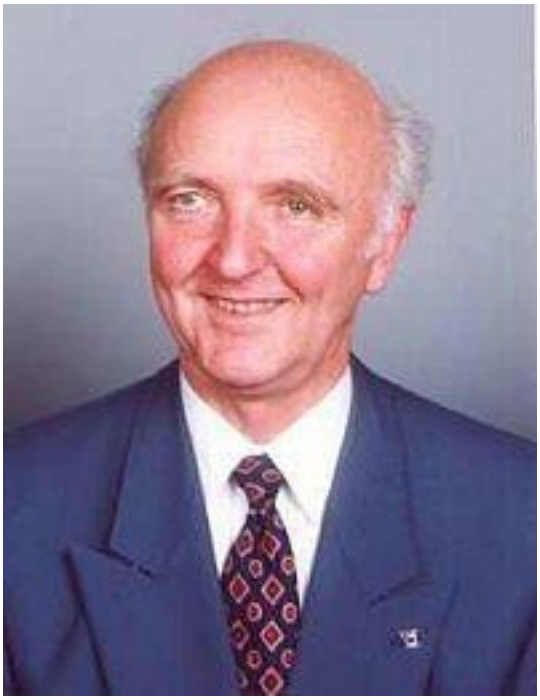
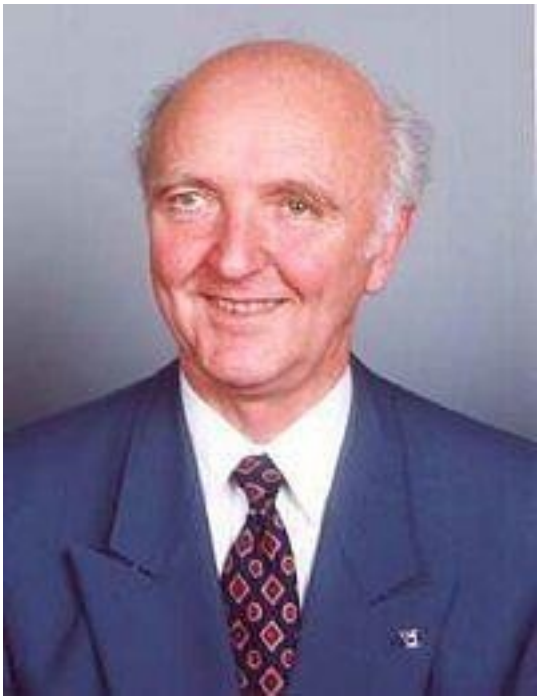
2003-05	**M.C.E. Huber,** Switzerland
2001-03	**M. Ducloy,** France
1999-01	**A. Wolfendale,** United Kingdom
1997-99	**D. Weaire,** Ireland
1995-97	**H. Schopper,** CERN, Germany
1993-95	**N. Kroó,** Hungary
1991-93	**M. Jacob,** CERN, France
1988-91	**R.A. Ricci,** Italy
1986-88	**W. Buckel,** Germany
1984-86	**G.H. Stafford,** United Kingdom
1982-84	**J. Friedel,** France
1980-82	**A.R. Mackintosh,** Denmark
1978-80	**A. Zichichi,** Italy
1976-78	**I. Ursu,** Romania
1972-76	**H.B.G. Casimir,** Netherlands
1970-72	**E. Rudberg,** Sweden
1968-70	**G. Bernadini,** Italy

Scanned at the American
Institute of Physics





looked so happy

heterogeneous

society

”Let us hang together or we shall hang separately”

Talk with one voice

red shift

too few members

groups leaving EPS

Restructuring

Secretariat moved

Associate members in

Members of National Societies -> EPS

EuroPhyNews -> all

Plus further actions

new contacts,
with

DG-XII EC,
UNESCO, ESF,
and others

by the time Maurice left

no red shift

60 000 members

quite a few associates

good contacts with APS, Japan,FSU, Ru,

There is so much to do and everything takes time

Maurice

some if his ideas were realized after he left

Exceptionally

successful

Never bragged

Never arrogant

and the

CERN

Member

States

13/7
svarade 2/8-93

Dear Cecilia,

In order to ensure an optimal continuity in the relations of CERN with its Member States, the Director General nominate has decided to appoint an assistant who would collect and assess information and maintain regular contacts. The DG should thus dispose at any time of up to date and detailed information and of advice for any action which he may deem appropriate. Chris Llewellyn-Smith has asked me to be in charge of this new service. I shall start working on this by the end of this year but some organization has to be set up in the meantime.

Whilst I shall whenever possible talk with the Delegates to Council and to the Finance Committee and pay visits to the Member States, I could not do such a job properly without the help of colleagues in the Member States whom I could bother from time to time and trust to call me whenever necessary. I shall need to have up to date and detailed information about the organization and funding of particle physics and to have a clear picture of CERN as seen from the Member States. I would like to keep regular contacts with a small network of correspondants consisting of one or two physicists in each of the Member States whom I could call upon for information and advice and would I could trust to quickly point out to me any problem or new development which might occur. This letter is to ask you whether you would kindly agree to be one of them.

Since you are in close touch with such matters in your own country, this should correspond to a minimal demand on your time. I thus very much hope that you will be in a position to accept. Could you then please give me the Phone number(s), Fax number(s) and electronic mail address at which I could contact you. If unfortunatly it could not be the case I would appreciate suggestions from you on whom to contact for that purpose.

With best regards,

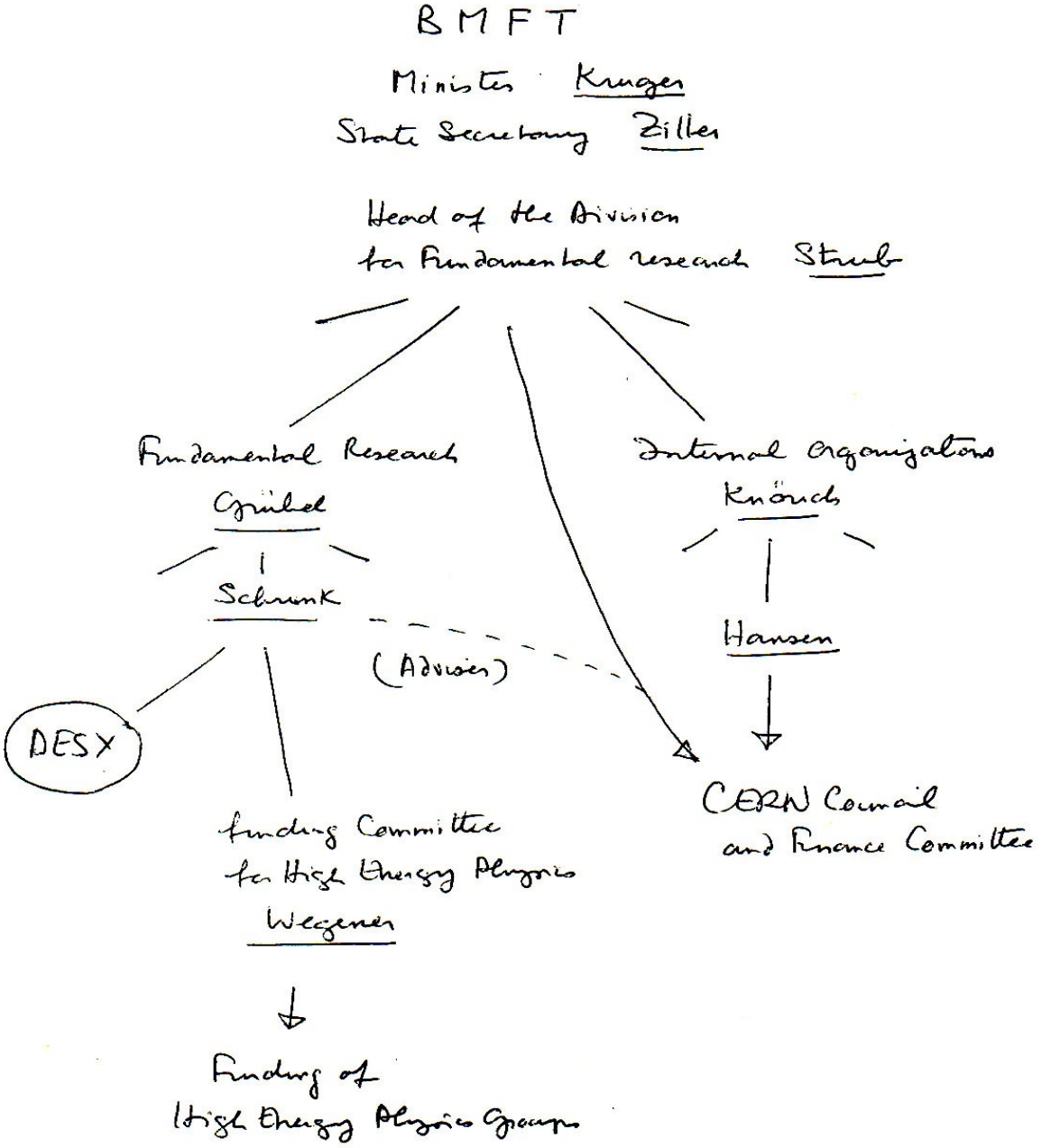
sincerely yours,

Maurice

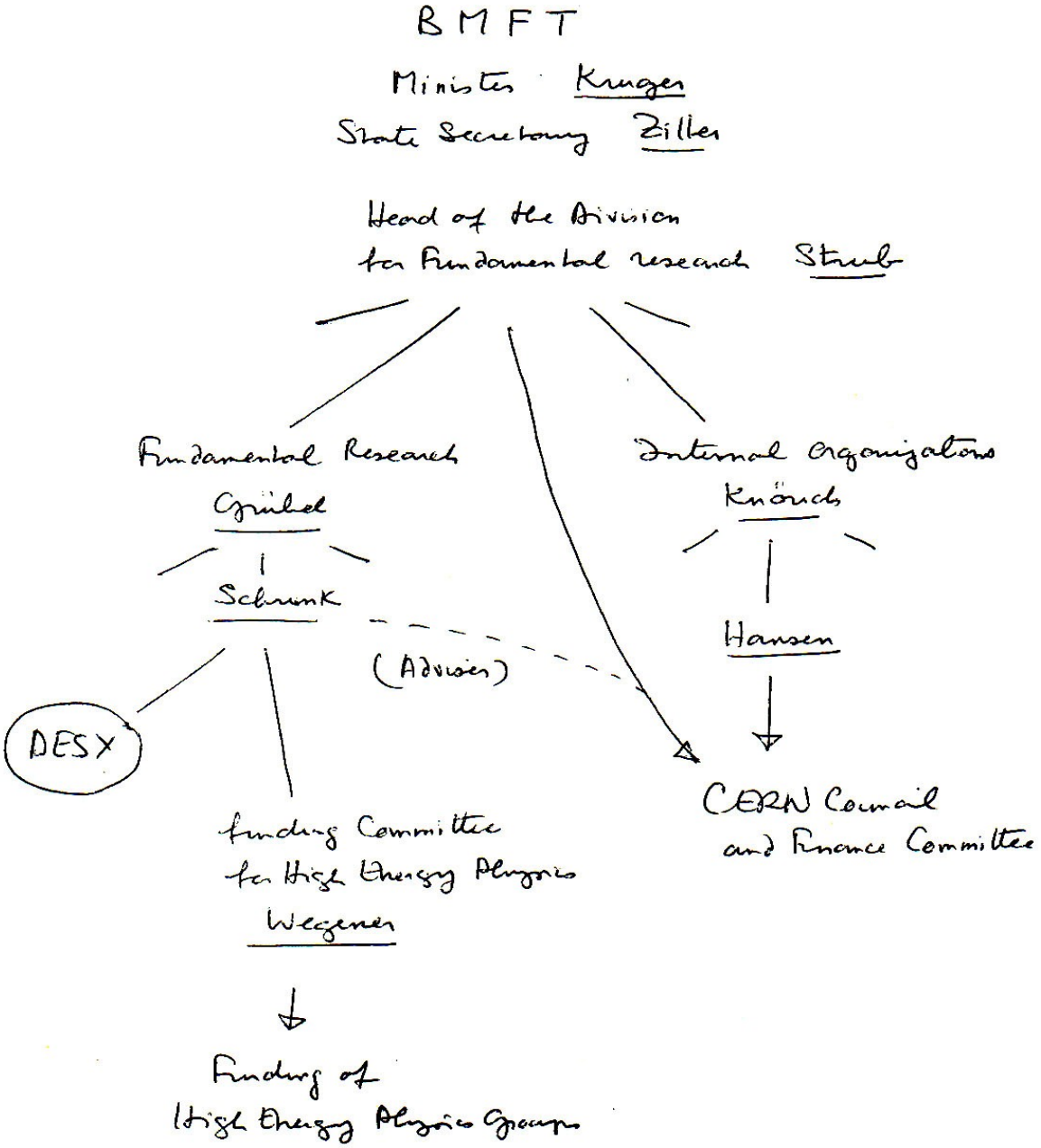
A small network of correspondants consisting of one or two physicists in each of the Member States

This letter is to ask you whether you would kindly agree to be one of them.

A great idea


BMFT
Minister Krueger
State Secretary Zilles
Head of the Division
for Fundamental research Straub
Fundamental Research
Gründel
Schwenk
(Advisor)
DESY
Funding Committee
for High Energy Physics
Wegener
Funding of
High Energy Physics Groups
Internal organizations
Knörich
Hansen
CERN Council
and Finance Committee

Format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Minister Krueger
State Secretary Zilles
Head of the Division
for Fundamental research Straub
Fundamental Research
Gründel
Schwank
(Advisor)
DESY
Internal organizations
Knörich
Hansen
CERN Council
and Finance Committee
Funding Committee
for High Energy Physics
Wegener
Funding of
High Energy Physics Groups

CERN
GENÈVE, SUISSE
GENEVA, SWITZERLAND

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE
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Laboratoire Européen pour la Physique des Particules
European Laboratory for Particle Physics

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CH-1211 GENÈVE 23

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General +41 22 7676111
Télex / Telex: 419000 CER CH
Télécopieur /Telefax:
Direct +41 22
General +41 22 7676555
Electronic mail:

Votre référence / Your reference
Notre référence / Our reference

13 Juillet

Chère Cecilia,

Je t'envoie cette lettre car les choses sont maintenant devenues plus officielles, mais je te remercie encore d'avoir accepté de m'aider dans cette tache.

Je t'envoie un organigramme que j'ai établi pour l'Allemagne. Je pense que tu n'as aucune difficulté à m'en donner un sur ce modèle pour la Suède.

Tout renseignement que tu jugerais bon serait le bienvenu.

Je suis navré de te manquer au CERN en Juillet partant en Italie (17-22) puis à Marseille (23-28)

Bien à toi

Maurice

Particle Physics in the Member States

1997-98

Information on particle physics in the 19 Member States of CERN. Number of researchers. Fields of interest. Organization and funding structures. Contributions to CERN and to research at CERN. Other activities in particle physics. Who is who in the administration and funding of research. Industrial impact of particle physics research. The CERN schools.

Industrial returns coefficients, as mentioned on each summary page, refer only to supplies. They may be misleading out of context and the more so in view of the existence of many international firms. With the normalization defined, a value should be considered good if it exceeds 0.8. The high values found in central Europe result not only from a particular effort but also from the still partial contribution against which they are normalized.

This document is prepared as a working tool for the CERN Management and the RECFA members. It was updated at the end 1997. The contribution given are those of 1997. Preliminary calculated ones for 1998 are also mentioned.

Please send comments, corrections and necessary additions to M. Jacob, CERN/DSU. These reports are stored electronically and regularly updated.
The presentation given corresponds to a CERN perspective. Complementary texts are added to the reports on Germany and Italy to provide a DESY and a Gran Sasso perspective, respectively.

involved at all steps when Portugal became a MS of CERN (1985)

CERN-Portugal committee

Creation of LIP

Laboratório de Instrumentação e Física Experimental de Partículas

Gaspar Barreira

a great diplomat

in dealing with ”people” in Member States,

visits to ministers,

. . . .

Maurice

and

Space

FPAG

of

ESA

Vol 32, Oct. 2003

Fundamental physics from space and in spac

Maurice Jacob

Maurice

the

Concerned

Scientist and

Defender of

CERN

CERN 85-17
13 November 1985

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

A TRIBUTE TO NIELS BOHR

Special Colloquium
held at CERN on 6 May 1985

GENEVA
1985

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held at CERN on 6 May 1985

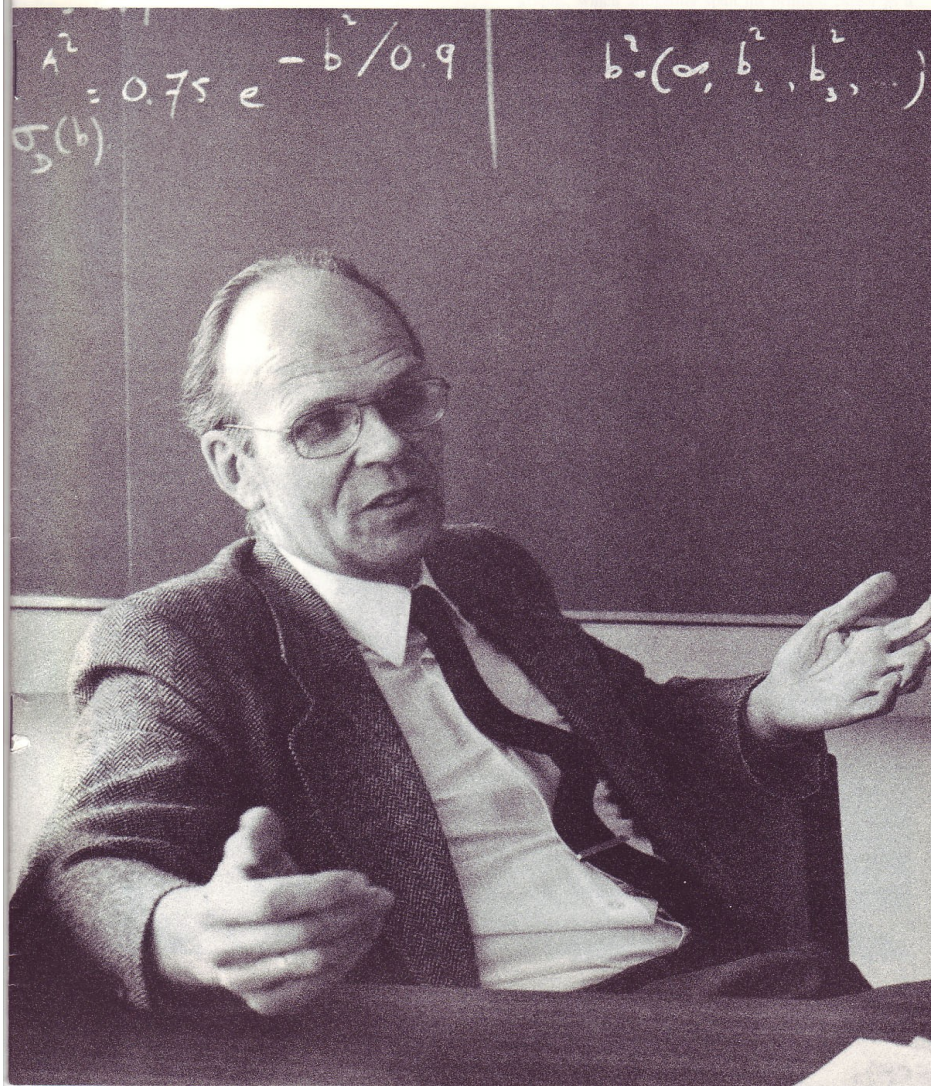
Editor

Maurice

GENEVA
1985

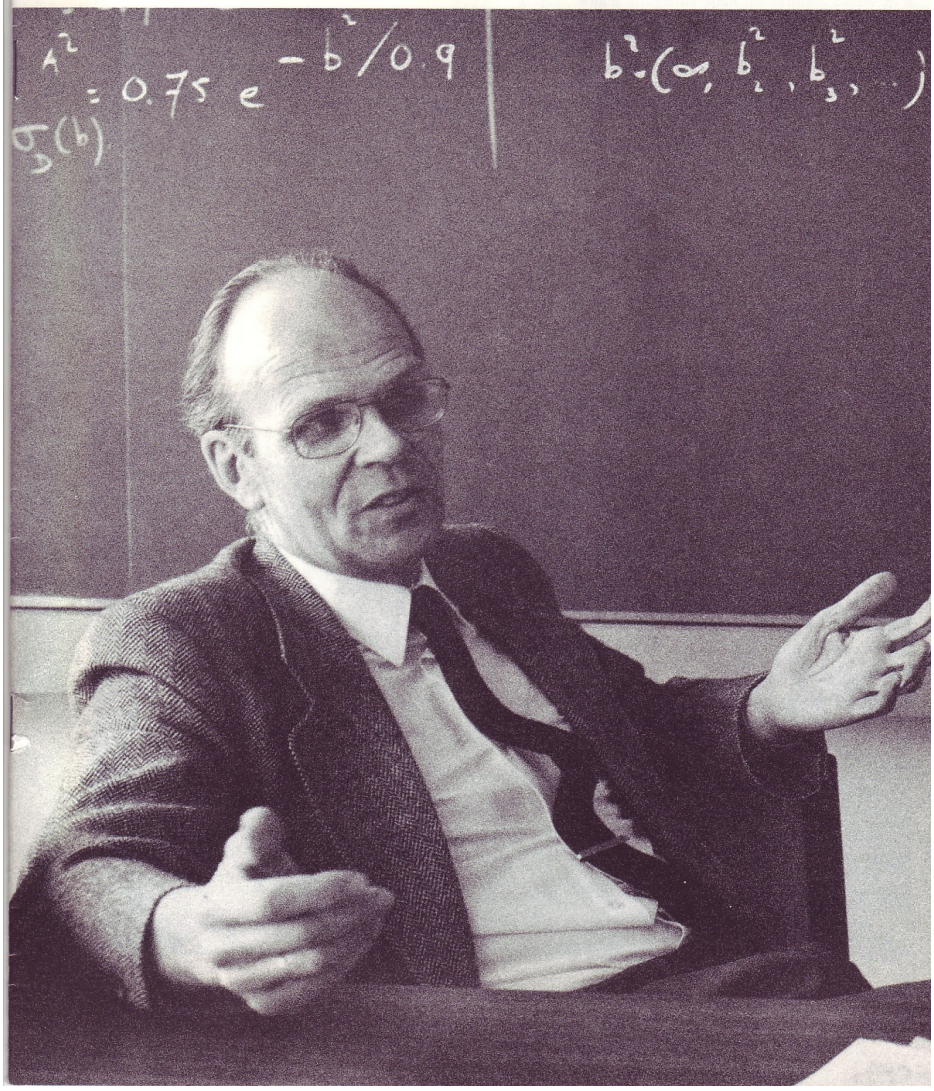
Léon Van Hove

1924-1990



Léon Van Hove

1924-1990



Again Maurice

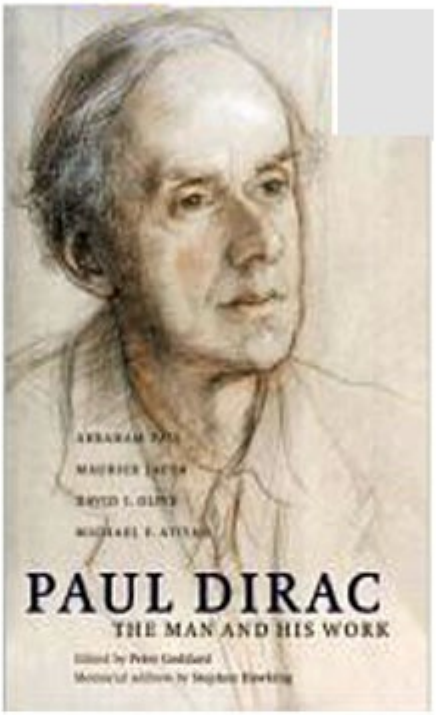
INTERNATIONAL JOURNAL OF HIGH-ENERGY PHYSICS

CERN COURIER

COMMEMORATIVE ISSUE

DECEMBER 2002

Victor F Weisskopf 1908–2002



1998 CUP

Maurice Jacob explains how Dirac was led to introduce the concept of antimatter, and its central role in modern particle physics and cosmology

CERN Courier

Aug 18, 2000

Wolfgang Pauli: never to be excluded

Pauli and mother

Chairman of the Pauli Committee

> 3000 letters

PHYSICS TODAY

FEBRUARY 2002

THE POWER OF GRID COMPUTING

The power of GRID com.

LETTERS

The Grid Grew from Physicists' Computing Needs

The feature article by Ian Foster on "The Grid: A New Infrastructure for 21st Century Science" (PHYSICS TODAY, February 2002, page 42) presents well the structure and great potential of the Grid. At a time when government funding tends to focus on short-term returns that directly benefit society while overlooking basic physics research, Foster has reminded us that physics remains closely associated with important new, far-reaching technological developments.

I think PHYSICS TODAY missed an opportunity to deliver an important message with the publication of this fine article: Basic physics research, and basic science research in general, is often the driving force behind important developments in computing. In the European part of the world map (see Foster's figure 4), the prominent role of CERN and of high-energy laboratories in Europe is obvious. Yet CERN (or its Large Hadron Collider) is briefly mentioned twice in the article, and only for its computing demands rather than for its contributions to the field.

During the mid-1990s, when I was the adviser to the CERN director general on member state affairs, I had to rally support for the LHC among nonscientists. The expected computing technologies resulting from the LHC and the potential for broad application of those technologies were a strong selling point. I would tell my audience that each large detector must handle more than 10^{15} bytes of information per year, about a million times that contained in the human genome. This fact made an impression. At the time, given the existing technology, it was impossible to handle that amount of information. The use of CD-ROMs for storage would have required a 3-kilometer-high stack of them; processing the information would have required 50 000 PCs.

But my experience has been this: Trust the physicists. By 2005, they will have found a way to meet the computing challenge, with resulting benefits for people from many walks of life. The detector collaborations, each with close to 2000 scientists, contain a vast number of highly competent people who freely exchange information and criticism. They know that, despite limited funding, they must be able to trade ideas and information and must have a successful system for that in place by the time the machine is completed.

Now, several years later, the picture has already changed. By making the best use of improving hardware and networking, scientists can reduce the storage stack by a factor of 5, and reduce the number of computers needed for processing by even more. The Grid offers the possibility of greatly enhancing the available computing power for any specific need.

Yet the capacity that LHC scientists will need has not been reached. Current technology, when fully used, already gives a factor of 10, but new developments to increase computing capacities by another factor of 10 are needed during the few years that remain before the LHC is commissioned. The Grid will play an important role in filling this need.

I think that particle physics (and heavy basic science research) as the driving force behind computing developments cannot be overemphasized. Clearly, particle physicists are not alone in demanding new and highly efficient computing means. However, carefully planned projects in the past have often fallen short of expectations, whereas those technologies that arise spontaneously out of the computing needs of physicists have paid large dividends, usually at relatively low expense.

Other arenas are motivating increases in computing power, particularly in the US, but particle physics has a specificity of its own. Very large amounts of data must be available simultaneously to a great many users. The number of physicists working coherently on the LHC will exceed 6000, scattered worldwide. These users will need both access to information and the ability to process it. The solution to this computing challenge, once implemented, will find many other applications.

So I would like to end on a provocative note: If you want much better computing worldwide, remember to also invest in particle physics. The computing advances are likely to come faster and to be less expensive that way than through a more direct, top-down route.

MAURICE JACOB
(maurice.jacob@cern.ch)
CERN
Geneva, Switzerland

FOSTER REPLIES: I appreciated Maurice Jacob's thoughtful comments on the important role that physics and physicists often play in advancing information technology. I believe strongly in the use of challenging practical problems as drivers for IT R&D; such problems serve to focus on the real issues and provide rapid, if sometimes painful, feedback when apparently good ideas do not work. I am also convinced that, to achieve the order-of-magnitude performance improvements promised by Grids, we must engage not only discipline specialists but also computer scientists: for better or worse, it is no longer sufficient to view IT issues as secondary to the physics. For these reasons, I and many of my colleagues are so excited about current Grid projects, many of which involve genuine multidisciplinary partnerships focused on extremely challenging problems.

Jacob speaks more specifically to the important role that CERN has long played in IT. In a brief overview article, I could not discuss specific projects; with more space, I would have written at length about the plans and achievements of the CERN-led European Union DataGrid and DataTAG projects, the pioneering work at Italy's National Institute for Nuclear Physics (INFN), and other physics-focused

Letters and opinions submitted for publication should be sent to Letters, PHYSICS TODAY, American Center for Physics, One Physics Ellipse, College Park, MD 20740-3842 or by e-mail to ptletter@aip.org (using your surname as "Subject"). Please include your affiliation, mailing address, and daytime phone number. We reserve the right to edit letters.

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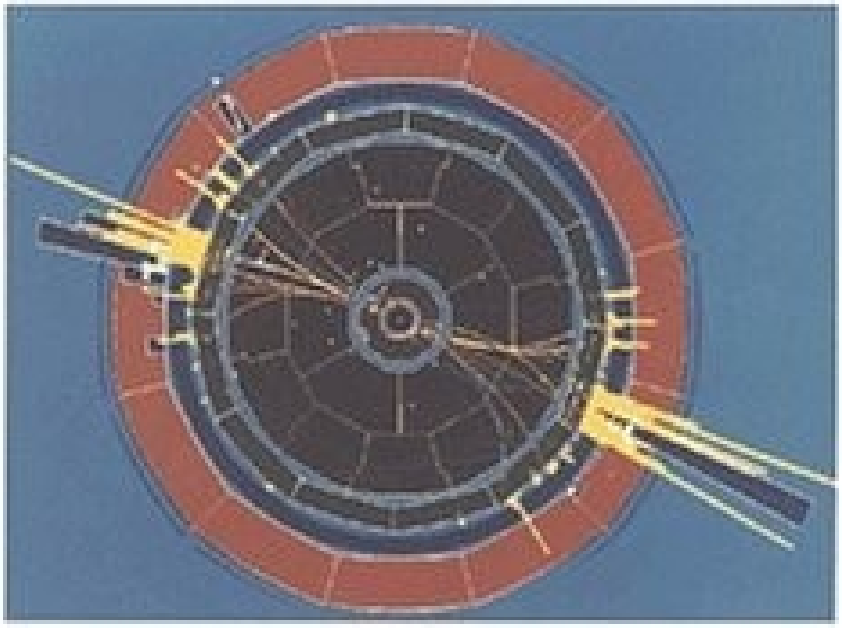
invest in particle physics

MAURICE JACOB

AU CŒUR DE LA MATIÈRE



EDITIONS
ODILE JACOB
SCIENCES

Maurice

frequently in

Debate

s

Panels

Maurice

the

photographer


Visitors
Visits
Nature

closest I ever
came to the stars

Theorem

Conjecture ?

Nobody is Perfect

Maurice neglected

Gravity

Life’s tragedy is that we get old too soon and wise too late

Benjamin Franklin

Merci Maurice

Fleur de lys

(ou fleur de lis)

fleur de

pour
Lise