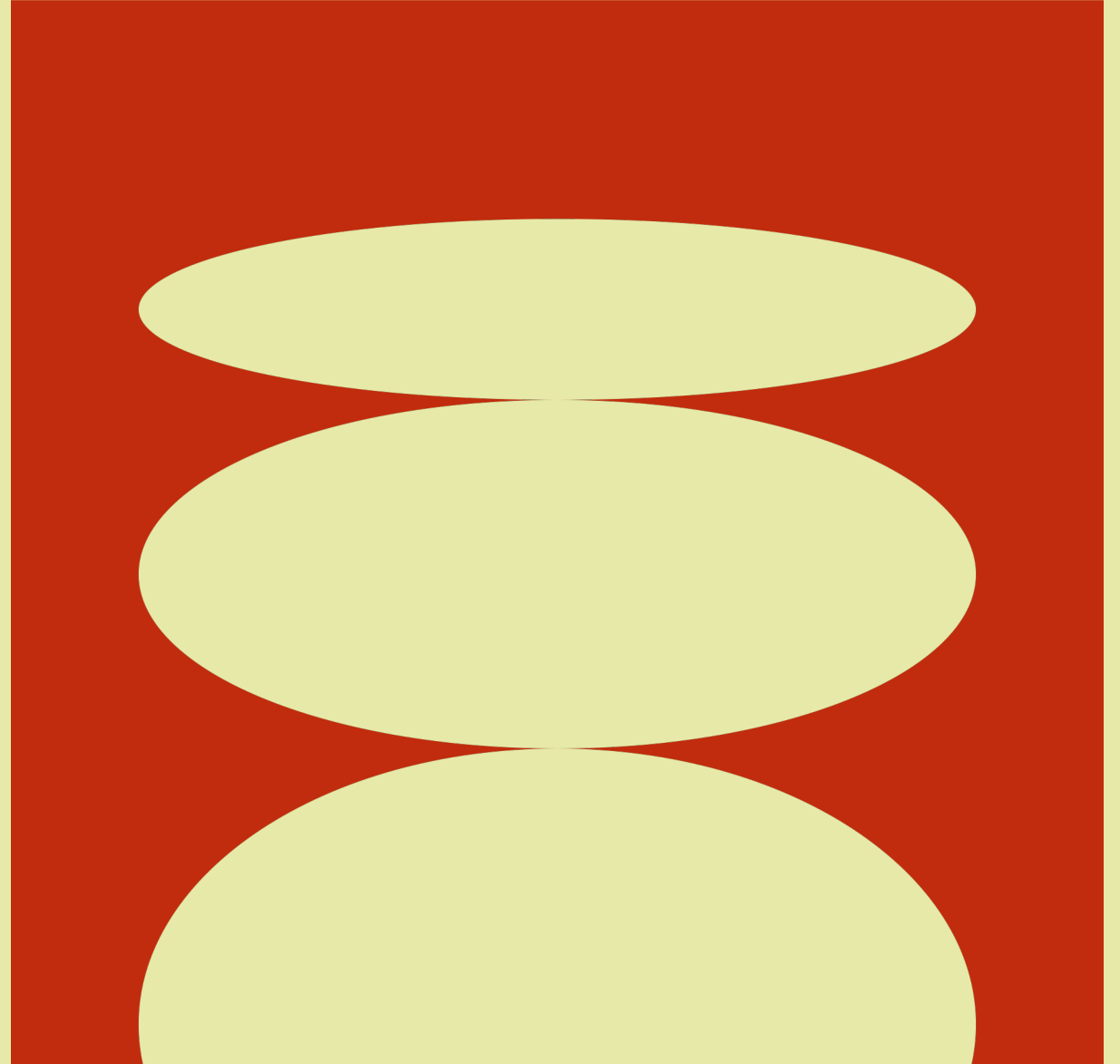


Grigoris Panoutsopoulos

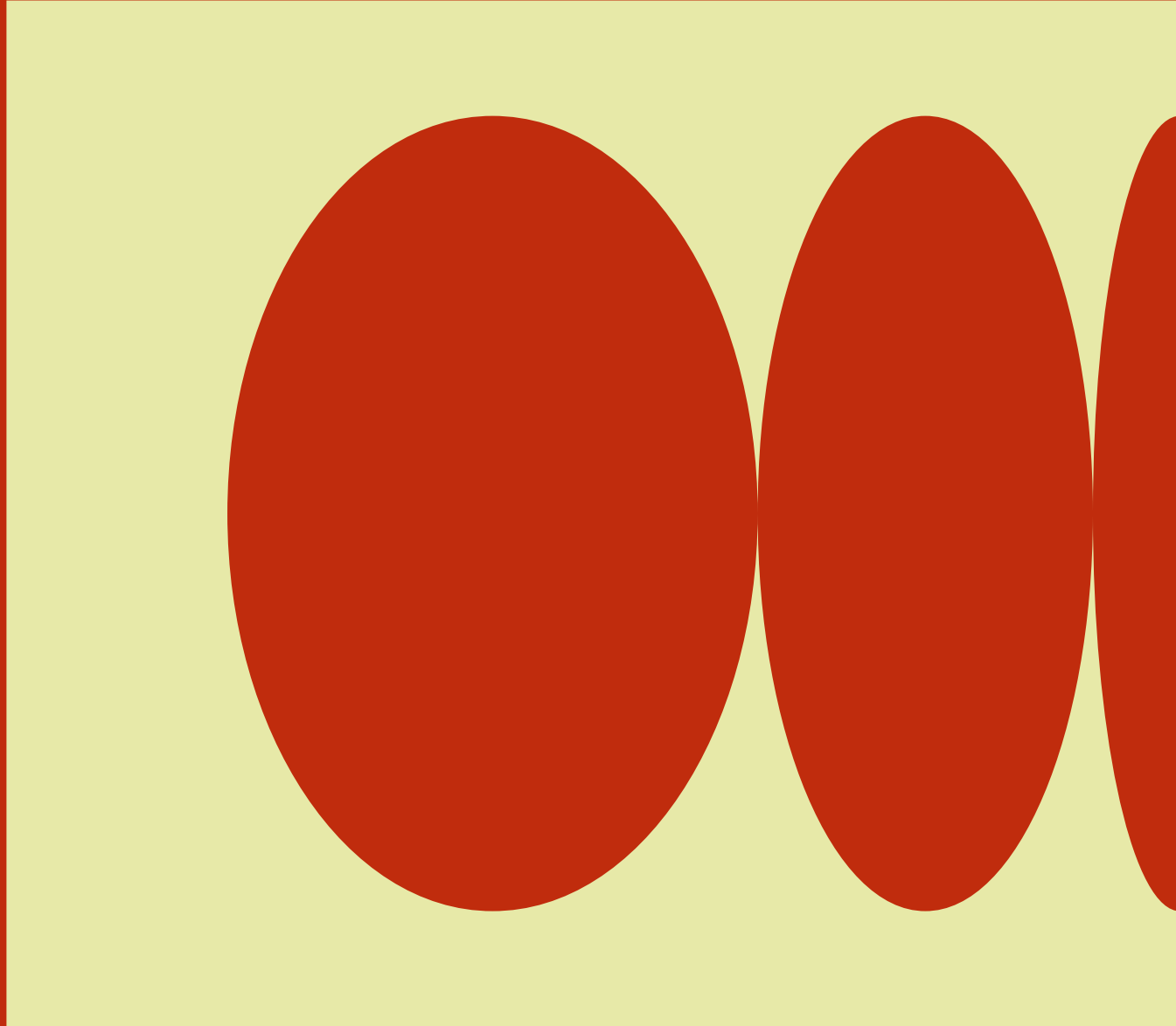
Postdoctoral Researcher

Universitat Autònoma de Barcelona

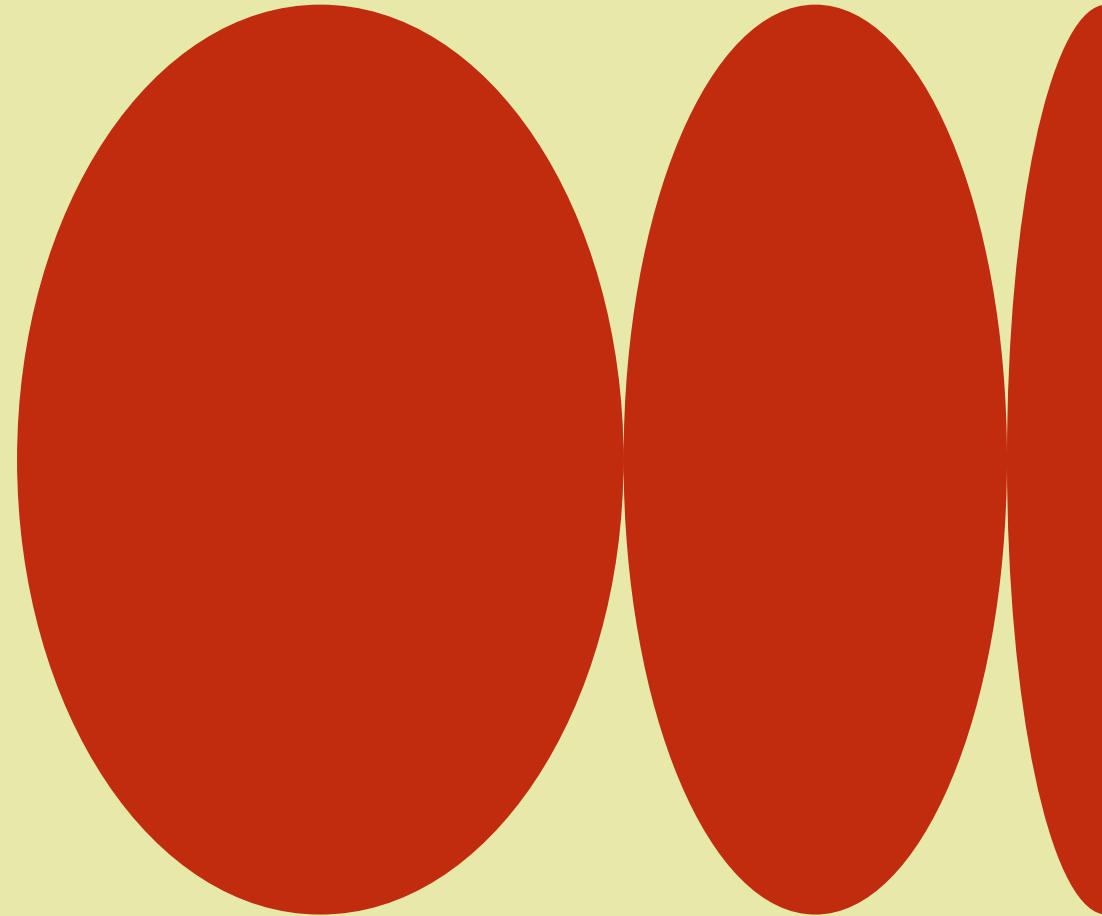
Vignettes from the Early History of the Large Hadron Collider



**Intro: Big Science
Projects as
Mechanisms of
Historical
Transformation**



**Visions in Collision:
The American-Centric
SSC**



The press conference in
CERN's main auditorium
where the discovery of
the W boson was
announced



The scale of the SSC as presented in Physics Today in 1985, in comparison with the Tevatron at Fermilab (the smallest ring) and LEP at CERN (the second largest ring).



“More and more, American accomplishments either recede into the past perfect or dangle in the future conditional, while the Europeans pursue the present indicative [...] Our concern is that if we forgo the opportunity that SSC offers for the 1990s, the loss will not only be to our science but also to the broader issue of national pride and technological self-confidence. When we were children, America did most things best. So it should again.”

Glashow and Lederman, *The SSC: A Machine for the Nineties*.

March 1985

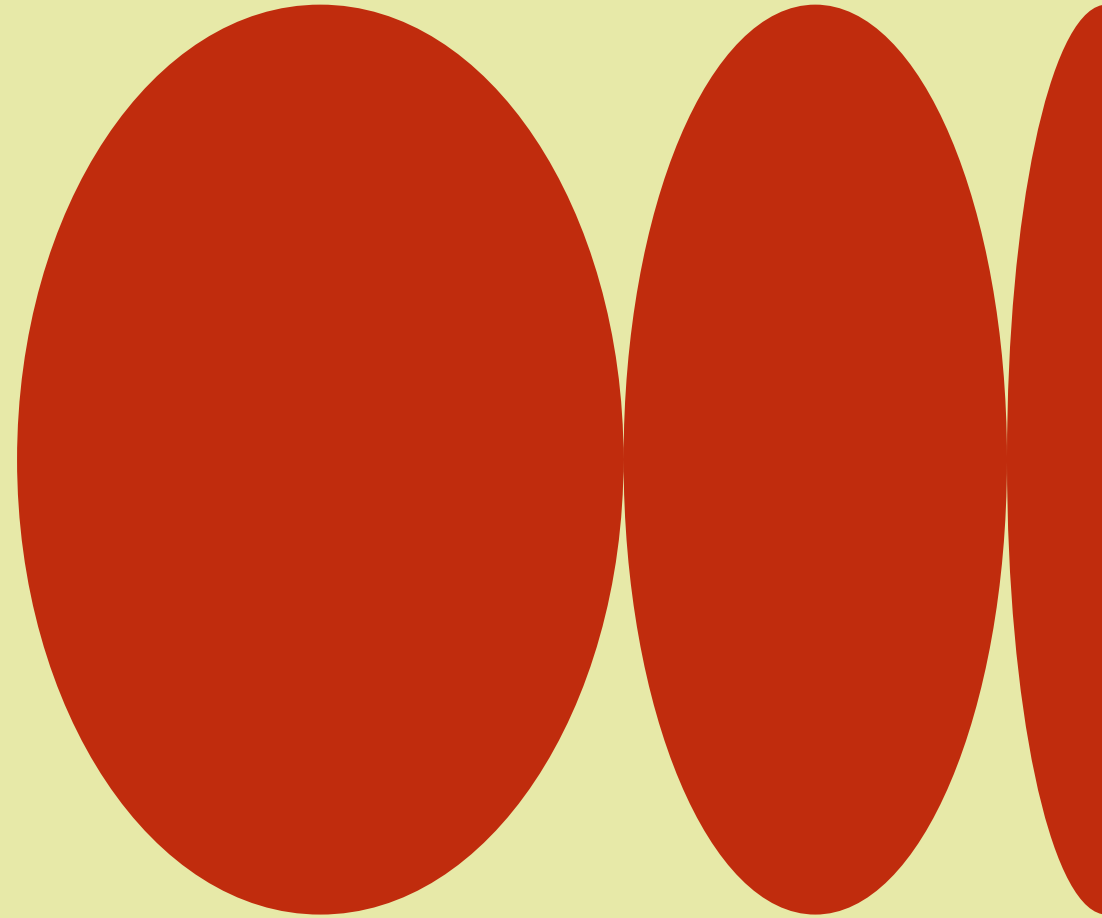


A button from Ronald Reagan's 1980 presidential campaign bearing the slogan "Let's Make America Great Again"

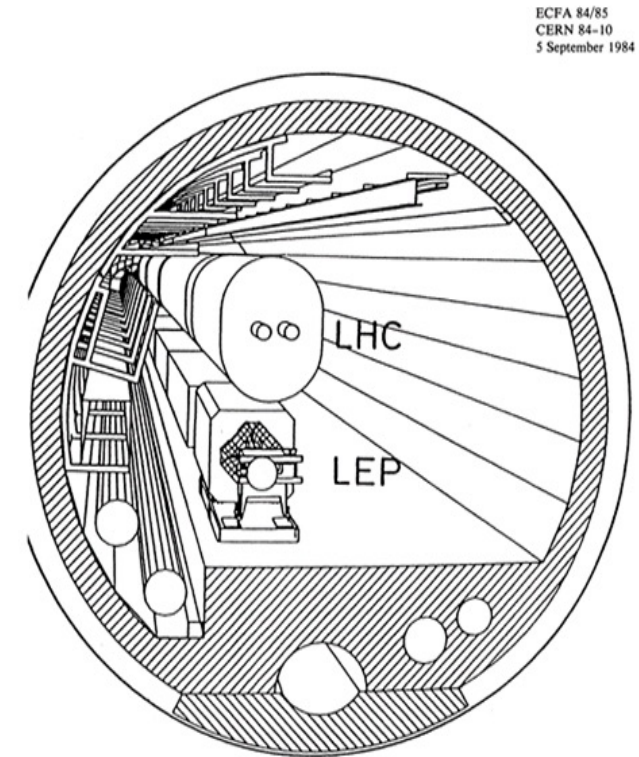
**Negotiations in
Washington in 1987
over European and
Japanese
participation in the
SSC**



Conceptualizing the LHC



The front cover of the proceedings of the 1984 Lausanne workshop, where the LHC was discussed for the first time. Note the depiction of the early design, which envisaged the coexistence of the LHC and LEP in the same tunnel.



**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

“When LEP was conceived, the Higgs was still far in the future and hardly anyone was talking about it. When the LEP tunnel was discussed, the focus was primarily on the competition with the SSC. The central question was who would win the race to reach higher energies. It was already clear in the long run that a proton machine would prevail, which led to the well-known workshop in Lausanne in 1984 where the possibility of installing a proton collider in the LEP tunnel was discussed.”

Herwig Schopper,

CERN's Director-General 1981-1988

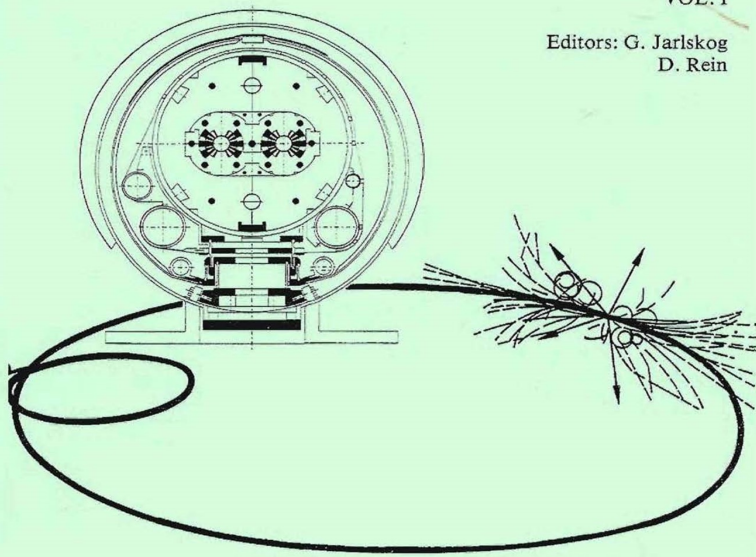
CERN 90-10
ECFA 90-133
Volume I
3 December 1990

EUROPEAN COMMITTEE FOR FUTURE ACCELERATORS

Large Hadron Collider Workshop

PROCEEDINGS
VOL. I

Editors: G. Jarlskog
D. Rein



Aachen, 4-9 October 1990



The front cover of the proceedings of the Aachen workshop in 1990.

“[o]ne may say that there is at present a theoretical consensus that the once fashionable desert will actually bloom, but there is no consensus on what flowers exist there.”

Summary Report of the Organising Committee,

Lausanne workshop, 1984

“A large hadron collider has always seemed an obvious option to follow LEP and it is clearly becoming time to start R&D on suitable magnets. It is less clear that it is sensible to discuss the physics that might be studied with such a machine [...] A theoretical consensus is emerging that new phenomena will be discovered at or below 1 TeV. There is no consensus about the nature of these phenomena but it is interesting that many of the ideas which have been suggested can be tested in experiments at an LHC. Although many, if not all, of these ideas will doubtless have been discarded, disproved, or established by the time an LHC is built, this demonstrates the potential virtues of such a machine.”

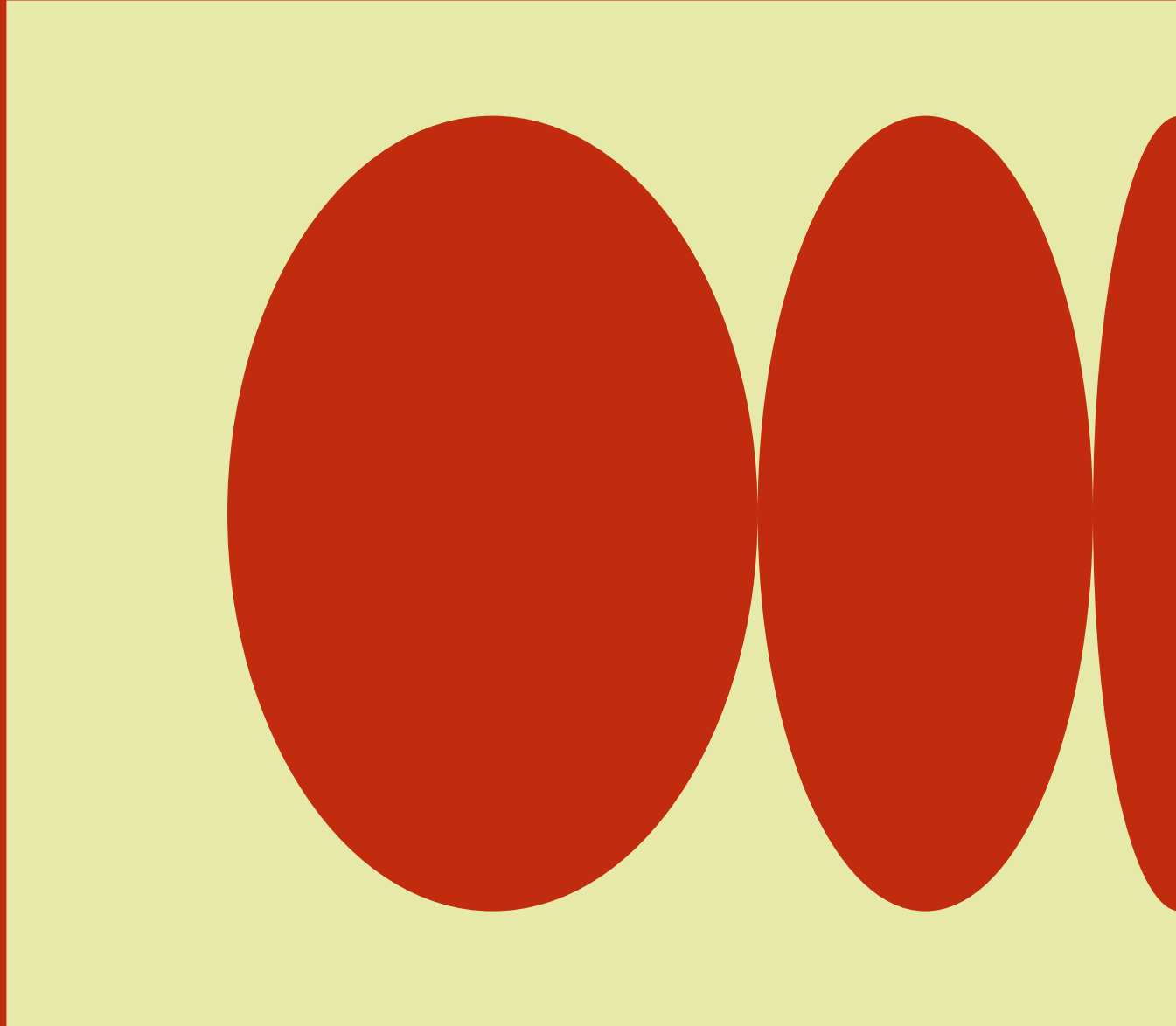
Christopher Llewellyn Smith,

Theoretical convener of the workshop in Lausanne

“It is quite plausible that the Higgs boson will be relatively light and that it will be discovered at LEP.”

La Thuile’s workshop, 1987

**Falling Walls,
Collapsing Colliders**



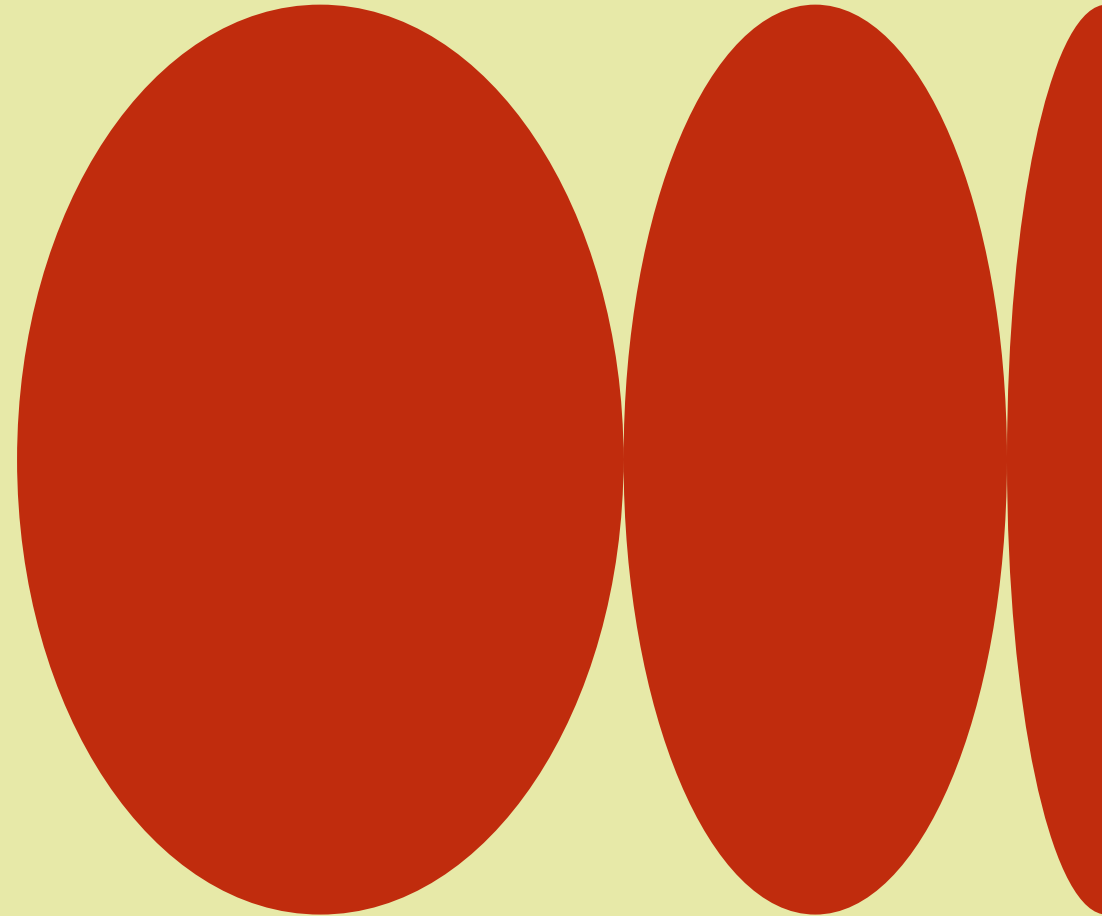


An underground tunnel dug
for the planned SSC



The Japanese Minister for Education, Science and Culture, Kaoru Yosano, and CERN's Director-General, Christopher Llewellyn Smith, at the ceremony marking the start of collaboration between CERN and Japan in June 1995. At this ceremony, Minister Yosano presented Professor Llewellyn Smith with a wooden Daruma doll. In line with Japanese tradition, the doll was painted with one eye to mark the start of the LHC project and the second eye would be added upon the project's completion.

**From Cold War
Networks to a New
European Integration:
Redefining Post–Cold
War Europe**





The Fall of the Berlin Wall, 1989

“CERN’s relations with the Eastern countries had to be seen in the larger perspective of the development of Europe as a whole. The European Community might wish to use the existing European Organizations to associate these countries progressively with its work by means of the various possibilities ranging from association to full membership [...] In view of the generous loans made available by several European national parliaments for the development of Eastern European countries, CERN could have an important role to play by announcing its willingness to coordinate the utilization and distribution of any resources attributed to the sector of high energy and particle physics”

Jacques Vernet,

Swiss delegate, Committee of CERN Council, 1990



On the 16th of June 1990, the prime minister of Poland, Tadeusz Mazowiecki, visited CERN in order to discuss with Carlo Rubbia the accession of his country to the European Organization.

“CERN is a European Laboratory, although the borders of Europe are a grey area.”

Sir William Mitchell, President of the CERN Council

“While the Convention states that CERN is an organization of European States, it does not specify what is to be understood by ‘Europe’. The Management proposes to take into account the interpretations generally accepted in international and diplomatic relations, which in particular implies that Russia is considered to be a European State.”

CERN Council, 1993

Poland's accession to CERN on 14 December 1990

“This symbolic occasion has a political dimension. We know that there is now a process of integration under way between Western, Central and Eastern Europe. And I consider that full membership of CERN for Poland is not only a Polish but also a European phenomenon. Last but not least, it has an industrial dimension. Polish society must be a competitive society. And to build a competitive society we must form part of global trends in high technology.”

Antoni Kuklinski, the Polish Vice Minister of Foreign Affairs,

“Poland’s participation in CERN must be regarded as a very significant step towards European integration.”

Roman Zelazny, President of the Polish National Atomic Energy Agency

“Poland’s accession was a clear signal that Germany’s Eastern border no longer marked the Eastern frontier of Europe.”

Klaus Titel, the German delegate

The letter of intent, written by Ivan Berend,
President of the Hungarian Academy of
Sciences, was addressed to Carlo Rubbia
with the aim of exploring the possibilities
for his country to participate in CERN.

CERN/SPC/629
CERN/CC/1881

MAGYAR TUDOMÁNYOS AKADEMIA
HUNGARIAN ACADEMY OF SCIENCES
THE PRESIDENT

ANNEX I

1361 BUDAPEST,
ROOSEVELT TER 9.

Professor C. Rubbia
Director General of CERN
Geneva

LETTER OF INTENT

Dear Professor Rubbia,

I would like to express my pleasure that we have signed a formal Agreement today between CERN and the Hungarian Academy of Sciences. There has been a long tradition of scientific research in Hungary, including the field of particle physics, and this agreement is a milestone in the development of this field of research.

For many years Hungarian scientists and engineers have actively participated in the research programmes of CERN - the European Laboratory for Particle Physics - which was recognized by an exchange of letters as long ago as 1979. The Agreement we have just signed is a good framework and a firm basis for the future development of our existing scientific and technical co-operation.

It is the declared intention of the Hungarian Government to seek ways and means of ensuring closer integration of Hungary into Europe, for both political and economic reasons. The recent developments in my country and in Eastern Europe as a whole allow me, on behalf of the Hungarian Academy of Sciences, to envisage a further step in this direction, namely acquiring the status of a Member State of your Organization.

Therefore, by this letter, I wish to express the interest of Hungary in exploring the possibilities of becoming a Member State of CERN, provided agreement can be reached on the necessary conditions. If you agree, I would like to suggest to commence with informal discussions in order to determine the terms and conditions according to which the Republic of Hungary could accede as a Member State of the European Organization for Nuclear Research. In case agreement can be reached, I will submit a proposal to the Hungarian Government which will send a formal letter to the President of the CERN Council, as required by the CERN Convention, asking for the admission of Hungary.

With my best personal regards,

Yours sincerely,

Budapest, May 15th, 1990


Ivan T. Berend

TELEPHON: 1327-176

TELEX: 224139

FAX: 1328-943

The agreement between CERN and the United States regarding the LHC project was signed during the Council session on 19 December 1997



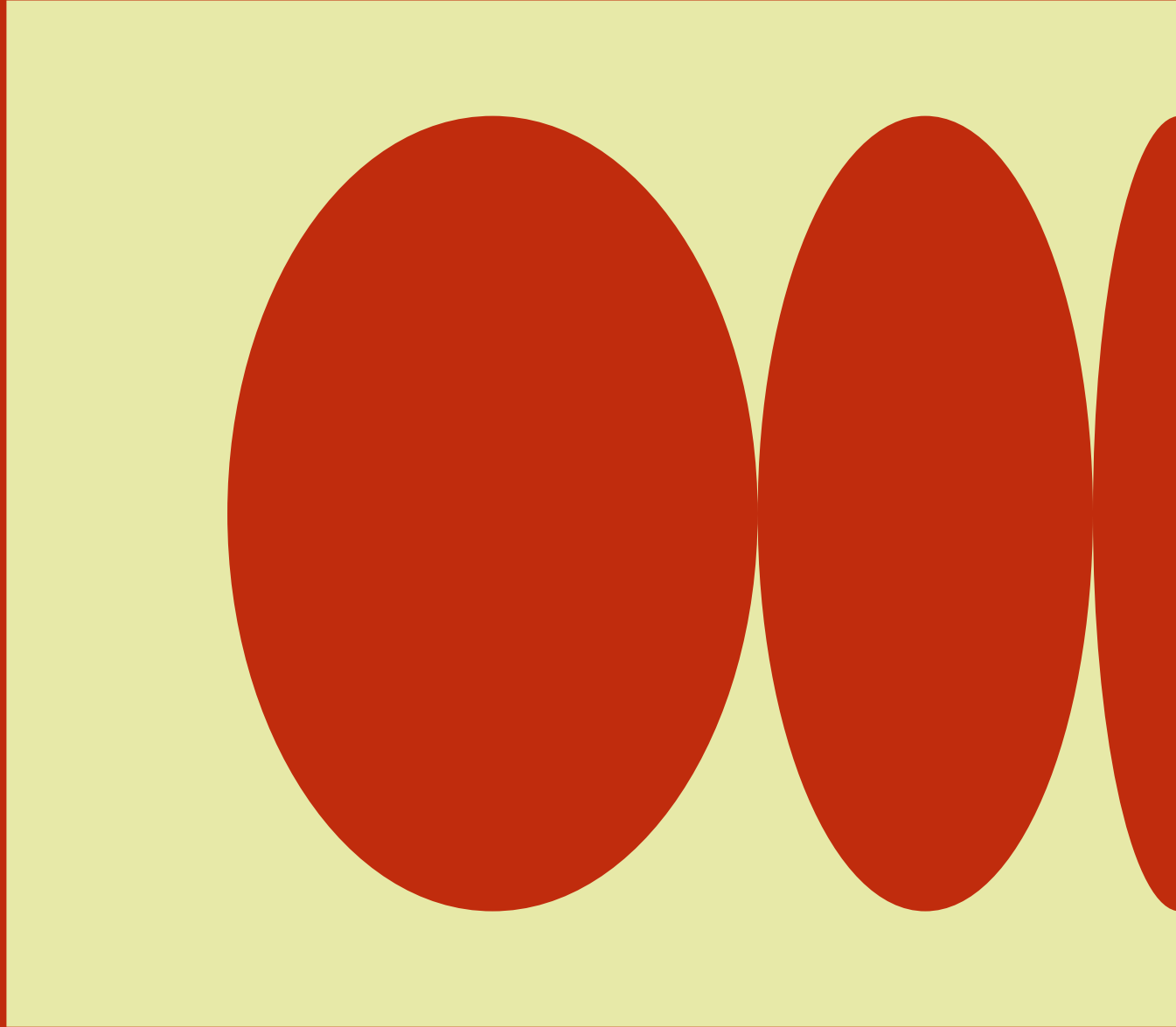
“The LHC may become the first ever world-wide science initiative [...] The foundation of CERN in the postwar years set a precedent in uniting the nations of Europe to carry out high quality ‘Big Science’ research. The LHC now offers the exciting opportunity of establishing a model for future world-wide collaboration in ‘Big Science’”

Sir Mark Richmond, representative of the UK at the CERN Council, 1994

“The ‘globalization’ of the LHC project would establish a precedent for future megascience projects, not only in particle physics but also in other fields”

CERN press release 1993, ‘The LHC, A world project’

Conclusions



“Approval of a project the size of the Large Hadron Collider is an exercise in politics and high finance”

Christopher Llewellyn Smith

Director-General (1994 – 1999)

Placing the LHC within a Wider Historical Context

- **Future of the global HEP:** After the cancellation of the SSC, the LHC became essential for the continuation of global high-energy physics and for CERN's survival.
- **The new European Integration:** In the post-1989 “new Europe”, the LHC enabled new states to participate in a major technological project and build scientific, industrial, and diplomatic networks with Western Europe.
- **Post–Cold War Big Science:** The LHC was one of the first major scientific projects of the new era, serving as a model for global scientific collaboration and new relations between states, industry, and finance.

THANK YOU



European Research Council
Established by the European Commission



Universitat Autònoma de Barcelona

