

Dr. Jenny List  
DESY  
Notkestr. 85 22607 Hamburg  
Germany

2. November 2018

Prof. Yasuhiro Iye  
Chair, the committee on the revised ILC  
Science Council of Japan

Dear Professor Iye,

let me start by introducing myself: I am a senior staff scientist at DESY and I have been leading since more than 12 years a research group dedicated to the evaluation of the scientific merit of future particle colliders like the ILC. In this position, I am scrutinizing the results of current experiments, foremost those at the LHC, and I am employing complex computer simulations to predict possible outcomes of future measurements e.g. at the ILC. Recently, I have been elected by the German particle physicists as one of nine members of the national policy committee for particle physics (“Komitee für Elementarteilchenphysik”, KET).

Since my childhood I’ve been fascinated with the stars on the nightly sky and the mysteries of our universe. I believe that the quest for understanding the origin of our cosmos is rooted deeply in the human nature, uniting people from the most different cultural backgrounds around the world. As a physics student, I realised that the key to the explorations of the early universe lies in particle physics, because its laws describe times so early that no stars were created yet. Particle colliders play a unique role by recreating for a tiny moment conditions as they were in our universe when it was only about  $10^{-12}$  seconds old!

Today, our boldest questions about the early universe, about the nature of dark matter, the mechanism behind cosmic inflation or the origin of the matter-antimatter asymmetry require to explore new territory. The discovery of the Higgs boson at the LHC in 2012 has given us a unique tool to approach these questions in a qualitatively new way. Based on all my expertise in this area, I am strongly convinced that the ILC, with its high degree of complementarity to any other existing research infrastructure, will lead us to unique new insights and expand the boundaries of our knowledge far beyond our current imagination.

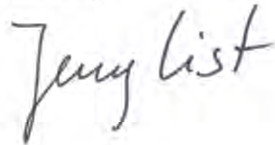
Therefore, I sincerely hope that the ILC will be built. The worldwide particle physics community has expressed their commitment to the ILC in Japan on many occasions, most recently at the Linear Collider Workshop 2018 in form of the “Texas statement”, but also in the last round of European and US strategy documents, and numerous times by the “International Committee for Future Accelerators” (ICFA). In particular in Germany, under guidance of the KET, a


series of workshops on future particle physics experiments was held over the last two years, concluding in May 2018 by ranking a linear electron-positron collider as the highest scientific priority and by expressing emphatic support for prompt construction of the 250 GeV ILC in Japan as an international project. I hope that the Science Council of Japan has been informed about all these statements.

Japan, at the moment, has the unique opportunity to host this project, and thereby create a unique research infrastructure, which over decades will not only serve fundamental science, but provide return of investment for technology, economy, education and society. Through the preparations for the ILC I have visited Japan for the first time, and I have learned to value its people and culture. I am confident that the ILC laboratory would be a beacon to scientists all over the world, similar to CERN now, and attract many scientists to visit Japan and live there for a longer time.

I am grateful for all the effort you and your colleagues in the Science Council of Japan invested into the scientific review of the ILC's physics program. I sincerely hope your effort will enable Japan to take the lead in the voyage to the early universe by expressing its interest to host, and, together with its international partners, to realize the ILC.

Yours sincerely,

A handwritten signature in dark ink, reading "Jung List". The signature is written in a cursive, flowing style. The first name "Jung" is written with a large, sweeping 'J' that extends upwards and to the left. The last name "List" is written in a more compact, cursive script.



Professor Yasuhiro Iye  
Chair, the committee  
on the revised ILC  
Science Council of Japan

Dear Professor Iye,

I am Prof. Alexey Drutskoy, the leader of the ILC group in the Lebedev Physical Institute (LPI) of the Russian Academy of Sciences, Moscow. I have been working for the International Linear Collider project since 2012.

The demand for the ILC construction is definitely motivated by the situation that we have today in particle physics. Only the ILC can provide detailed information on the behaviors of the Higgs boson, which is very important for the progress of particle physics over the next decades. If the ILC will not be build, the question about the physics beyond the Standard model will probably be postponed for 30 years.

The ILC project is well developed from the point of view of collider and detector technologies, as well as a physical research program. In addition to potential progress in fundamental physics, the development of valuable technologies is also expected.

The ILC realization is very important for all scientists working for this project. We expect that the ILC will become the biggest mega-scale project in Japan, which will lead to a brilliant scientific and technological development in various areas. We hope for your support in promoting the project.

Sincerely, Alexey Drutskoy.

Professor, Lead Scientist, LPI, Moscow, Russia.





Professor Yasuhiro Iye  
Chair, the committee on the revised ILC  
Science Council of Japan

Dear Professor Iye,

I represent the Max Plank Institute for Physics in the reasearch and development group of a detector (called the TPC) which measures tracks from the collisions at the ILC.

I have been working on this for the last

15 years with the goal of having a good detector when the ILC is built.

I support the ILC for obvious reasons. which I won't repeat here since you know them already.

Best regards,

Dr. Ronald Settles

Max-Planck-Institut f. Physik, Muechen

[REDACTED]





DESY | Notkestrasse 85 22607 Hamburg

Prof. Yasuhiro Iye  
Chair, the Committee on the Revised ILC  
Science Council of Japan

Dr. Ties Behnke  
Lead Scientist  
Group Leader

DESY FLC  
Notkestrasse 85  
22607 Hamburg  
Germany

5 November 2018

Dear Professor Iye,

I am writing this letter in my function as head of the FLC group at DESY. My group has been working on future collider projects since many years, and is studying the physics case, and implementation and the realization of future collider projects, in particular, electron positron collisions. A focus of our work for the past 10 years or so has been the international linear collider, ILC.

Numerous studies over the past years have consistently demonstrated the very strong scientific case for this collider. The detailed study of the mechanism of the electroweak symmetry breaking, initially through the study of the Higgs boson, promises to advance our knowledge about the fundamental working of our world significantly. Even though the large hadron collider at CERN is delivering excellent and exciting results I am convinced that the linear collider will add fundamentally new and different aspects to this field. The excellent precision and the unique power of an electron positron collider to study this problem without any bias will be a key asset in the drive of the scientific community to understand the Higgs particle. The linear collider in addition offers the great advantage of flexibility – its energy can be adjusted to the scientific needs, its technology can take up technological advances to address the scientific needs in the most effective manner.

The ILC is an exciting international project, which will contribute in a major way to our understanding of the world. Japan is currently in a unique position to play a key role in this truly international endeavor. I am convinced that the ILC, if realized, will become a beacon of research for the next decades.

I want to thank you personally and Japan as a country to review the scientific opportunities ILC is offering. I very much hope that Japan will move forward to offer to the international community to host the ILC, and thus make this very important step towards realizing this unique facility.

Yours sincerely

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Directorate for Innovation)







Professor Yasuhiro Iye  
Chair, the committee on the revised ILC  
Science Council of Japan

Dear Professor Iye,

I am contacting you, because it came to my attention that you are chairing the SCJ committee regarding the ILC. I have been involved in this project and predecessor projects such as the TESLA collider all my academic life starting from the DESY summer student program in 1999. Now, I am writing in my function as spokesperson of the Linear Collider TPC (LCTPC) collaboration consisting of 25 groups from 13 countries united to develop a new tracking TPC for the ILC detectors. In the last years we have developed new ideas for this detector type which are now already implemented in other experiments. I would like to express my unbowed interest in the ILC and its extraordinary precision physics program. I would also like to point out that our collaboration attracts again and again throughout the world new young students interested in contributing to the common effort of the detector development. Therefore, I would like to convey my hope, that the SCJ will support the ILC and that Japan will take the lead I realizing this important project.

Best regards



(Dr. Jochen Kaminski)



11/7/2018

Professor Yasuhiro Iye  
Chair, the committee on the revised ILC  
Science Council of Japan

**Letter of support for the ILC-project**

**Dear Professor Iye,**

**As leader of the particle physics group at Lund University, Sweden, which is working on detector development for the ILC, I hereby would like to express our strong support for this project.**

**The ILC opens up for clarifications of important and still unanswered questions in particle physics as well as for advances in the understanding of the creation and evolution of the Universe. It is regarded by the whole Particle Physics community as the next big project in Particle Physics, as expressed in reports from e.g. the ECFA and ICFA committees.**

**I hope that the SCJ recognizes the scientific significance of the ILC and allows us to step forward to do our best to lead the ILC project to reality.**

**Sincerely yours,  
Leif Jönsson  
Professor**





Dr. Marcel Stanitzki  
DESY  
Notkestr. 85  
D-2260 Hamburg  
Germany



**Professor Yasuhiro Iye**  
Chair, the committee on the revised ILC  
Science Council of Japan

7. November 2018

***Dear Professor Iye***

I am currently the elected co-spokesperson of the SiD detector consortium, one of the two proposed detectors concepts for the International Linear Collider (ILC) and I am writing to strongly support the ILC project in Japan.

The full exploration of the properties of the Higgs boson with the utmost precision is a major imperative for science and will provide unique information about physics beyond the Standard Model. The detailed investigation of the Higgs has great potential for significantly advancing our understanding of the evolution and operation of the universe. Even beyond the study of the Higgs boson, the physics program of the ILC is extremely rich and will deliver many additional results.

The ILC is the essential tool to carry out this vital research.

Japan has a tremendous opportunity to take the lead in fundamental science with the ILC. The technology developed for the ILC will contribute to advances in many areas of the physical sciences, health, and beyond. The ILC will train the next generation of young scientist and engineers and hence will have a large economic impact in Japan and worldwide. As many previous large-scale projects in high energy physics, this facility has the potential to be operated for decades with new technologies and scientific goals.

The positive endorsement of the ILC and its world-leading scientific program by the Science Council of Japan will be recognized as a major step forward for global science and would position Japan as a leader in global science.

Sincerely,

Dr. Marcel Stanitzki







November 7, 2018

Professor Yasuhiro Iye, Chair  
Committee on the Revised ILC  
Science Council of Japan  
22-34, Roppongi, Minato-ku  
Tokyo 106-8555  
Japan

Dear Professor Iye:

As Director of TRIUMF, Canada's particle physics centre, I am writing to express my strong support for the International Linear Collider (ILC). The ILC is the most important project being planned in particle physics worldwide, and I can attest that my laboratory is anxious to participate.

I am sure others have written you with detailed explanations of why the ILC is so important. Simply put, the ILC will be a Higgs Factory, producing hundreds of thousands of Higgs particles, and allowing the properties to be studied with great precision. And with that precision, the machine has great discovery potential.

Why are we interested in the Higgs? Because it is a new form of matter, unlike the quarks and leptons and gauge bosons that make up everything else here on Earth. Its tiny quantum fluctuations hold the potential to reveal physics far beyond what we can access directly, even with the highest energy colliders. To my mind, the Higgs holds the key to unlocking other fundamental mysteries of our Universe.

Without doubt, the ILC will be one of the world's largest and most sophisticated scientific endeavours. Its realization will require global collaboration and Japanese leadership. And Canada stands ready to help. Indeed, Canadian participation in the ILC is foreseen in the 2017-2021 Canadian Subatomic Physics Long Range Plan:

"The International Linear Collider (ILC) is a future precision frontier project that, if funded, would likely attract a large number of Canadian researchers and would require significant resources for a Canadian contribution. Through the technology transfer enabled by the instrumentation choices made for ARIEL at TRIUMF, the Canadian industrial sector is well positioned to contribute to aspects of the ILC accelerator program. The current small team of Canadian physicists working on the International Large Detector (ILD) should be supported in order to maintain a stake in this important project and its broad scientific program, for which a funding decision is expected early in the five-year period."



At present, Canada holds a seat on the Linear Collider Board, the organization responsible for overseeing the ILC preparations. Canada also contributes to the Linear Collider Collaboration Common Fund, and Canadian researchers are helping design the ILD detector. Moreover, Canadian-Japanese collaboration has a long history, in materials science here at TRIUMF and in subatomic physics at KEK and J-PARC.

For all these reasons, I am confident that if Japan proceeds with the ILC, the Canadian physics community will enthusiastically join the effort, much as it does at present with the CERN LHC.

Thank you for your work in evaluating the ILC project. I join the rest of the world physics community in hoping for a decision to proceed by Japan before the end of the year.

Yours sincerely,

A handwritten signature in black ink, reading "Jonathan A. Bagger".

Jonathan A. Bagger  
Director

Paris 7th of November 2018

Henri Videau,  
Laboratoire Leprince-Ringuet  
École polytechnique  
Palaiseau, France

To

Professor Yasuhiro Iye  
Chair of the committee on the revised ILC  
Science Council of Japan

Dear Professor Iye,

I take the liberty to write to you concerning the International Linear Collider project which construction in Japan is currently under scrutiny by the committee you chair. I understand perfectly that this decision is a Japanese decision. But I feel concerned.

I am myself the former director of the LLR laboratory and have been engaged since the beginning in the project of ILC and more specifically in the ILD detector project. I am currently an elected member of the Executive Team of ILD and specifically in charge of estimating the cost of this detector.

The very consequent work accomplished by the LLR group on the detector design and realization, (essentially on the electromagnetic calorimeter and the particle flow analysis) is directly the result of our strong belief that the linear collider is the adequate response to the physics puzzle we are facing in view of the LHC results. Notice that our laboratory is also involved in the CMS experiment at LHC.

I have no doubt that the accelerator technology is mastered by different countries, together with Japan, wishing to contribute to ILC with a Japanese leadership. I am involved in cooperating with Japanese physicists since long and a group in our lab is also involved in T2K. Together with Japanese groups, from KEK or Tokyo and Kyushu universities, we are elaborating a real detailed project for ILD which appears to me as perfectly adequate to our physics goals.

I would be extremely happy that Japan, taking the rare opportunity to build a large new international facility, leads us in the realisation of such a promising project and that the Scientific Council of Japan helps us in that direction.

With my best regards

Henri Videau



With the full support of Jean-Claude Brient, actual director of the LLR and coordinator of the ILD electromagnetic calorimeter, Vladislav Balagura representing the LLR at the ILD Institute Assembly and Vincent Boudry head of the LLR ILD group.





Professor Yasuhiro Iye

Chair, the committee on the revised ILC Science Council of Japan

Dear Professor Iye,

I'm a physics teacher in Shinshu-university, where I'm teaching and researching ILC and its physics as the best candidate accelerator for the study of Higgs particle, Higgs particle is carrying a key to understand the Big-Bang.

Only the experimental study of Higgs particle can realize the aim. Since the Higgs particle is supposed to give masses to every particles, depending on particle kinds. Those measurements should be performed with high precision, otherwise we will lose the opportunity to attack the Higgs particle's secrets. This also leads to loss of chances to understand the Big-Bang, the model to be why WE ARE HERE. This inquiry is the basic question of all of us, in the world.

Therefore we ask you to share the idea and promote the ILC in Japan.

You may ask colleagues around you to write a letter also.

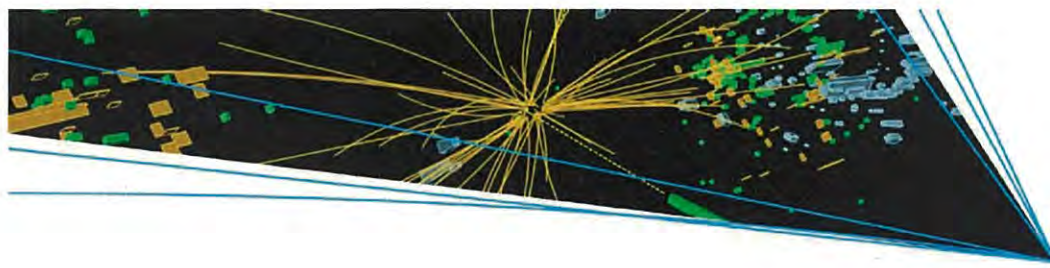
Best regards.

Tohru Takeshita,

Shinshu University, Faculty of Science, Matsumoto, Japan.

竹下徹：信大理 XXXXXXXXXX





Komitee für  
Elementarteilchenphysik

Professor Yasuhiro Iye  
Chair, the committee on the revised ILC  
Science Council of Japan

12. November 2018

Dear Professor Iye,

On behalf of the Committee for Particle Physics, KET<sup>1</sup>, I would like to express the full support of the particle physics community in Germany for the International Linear Collider ILC (in its revised version). Concluding a series of workshops, the community issued a statement in full support of the ILC in May 2018. The statement<sup>2</sup> is in German, its literal translation reads:

**“We strongly support the Japanese initiative to realize the ILC as a Higgs-Factory with an initial energy of about 250 GeV as an international project in Japan.”**

An electron positron collider has the highest priority for the community in Germany for the future of collider-based particle physics. We acknowledge the great physics potential of the ILC250 and are convinced that this project is the right way to move forward internationally in particle physics. A corresponding statement will be included as well in our input to the upcoming European Strategy Process for particle physics<sup>3</sup>. For our community, it is important to maintain the technical possibility to extend the ILC250 to higher energies in the distant future, in order to be able to perform precision studies of the top quark and the Higgs self-coupling. However, we are also convinced that the physics program associated with ILC250, in particular the precision study of the Higgs boson, bears tremendous discovery potential.

SENDER:

Prof. Dr. Christian Zeitnitz



Homepage:

[www.ketweb.de](http://www.ketweb.de)

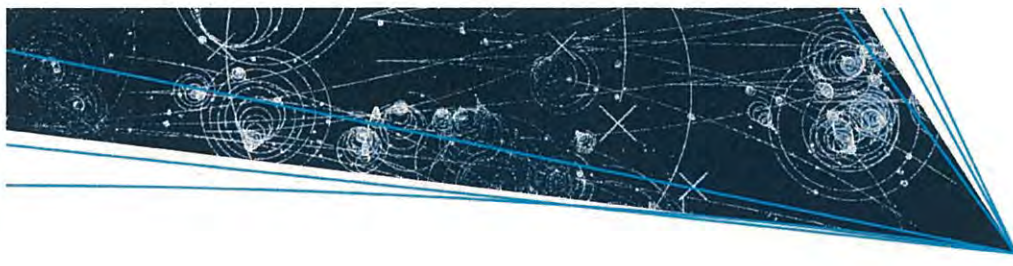
Address:

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42097 Wuppertal  
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<sup>1</sup> KET: The *Komitee für Teilchenphysik* is an elected body of the particle physics community in Germany which represents the community inside and outside of Germany.

<sup>2</sup> <http://www.ketweb.de/e199632/e199635/e268373/e296589/Abschlusserklaerung.pdf>

<sup>3</sup> <https://council.web.cern.ch/en/content/european-strategy-particle-physics>



Germany has strongly supported superconducting linear collider projects ever since the initial TESLA design. The European XFEL operated at DESY represents a technological asset which cannot be overestimated.

The particle physicists in Germany are eager to participate strongly in the ILC250 in Japan and are looking forward to the approval of the project and to a fruitful international collaboration over the next decades.

Yours sincerely,

Prof. Dr. Christian Zeitnitz

Chair of KET



# UNIVERSITY OF OXFORD

## Department of Physics



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John Adams Institute for Accelerator Science  
Denys Wilkinson Building  
Keble Road  
OXFORD  
OX13RH

13 November 2018

### Letter concerning the International Linear Collider

Dear Professor Iye,

I am writing in support of the realisation of the ILC Project in Japan via an international collaboration. I am the Spokesperson of the Linear Collider UK (LCUK) consortium, comprising representatives from all United Kingdom university particle physics and accelerator physics groups, as well as the STFC accelerator groups. I have been working on linear colliders since 1989, and specifically on ILC since the project was started in 2004. I am personally committed to the success of the ILC if it is realised in Japan.

The ILC represents the logical next step for global particle physics research. It will allow precise exploration of the Higgs-boson sector and unique tests of the Standard Model, as well as searches for Beyond-Standard-Model physics phenomena with sensitivity to mass scales up to 10-100 TeV in many cases. I think that the SCJ is very familiar with these powerful capabilities of ILC.

In addition the ILC presents Japan with a timely, unique opportunity to:

- host and lead a forefront, global-scale science facility, attracting major overseas scientific and technical contributions;
- bring overseas knowledge and skills to the Japan-hosted project;
- attract many highly-educated researchers and engineers, who will enrich Japanese society and contribute to economic advancement in high-technology sectors;
- inspire a new generation of scientists and engineers.

I hope, respectfully and sincerely, that the SCJ will recognise and endorse the ILC as a beacon of scientific progress aimed at bringing nations together in peaceful and harmonious collaboration for the benefit of all of our citizens. I offer my personal support for the ILC project, and I can assure you that the UK particle physics community strongly supports ILC and desires to participate in it.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'P. W. Burrows'.

PHILIP BURROWS  
PROFESSOR OF PHYSICS AND INTERIM DIRECTOR, JOHN ADAMS INSTITUTE






FUNDAMENTAL PHYSICS DIRECTORATE

**JoAnne Hewett**  
Associate Lab Director  
Chief Research Officer

2575 Sand Hill Road, MS 81  
Menlo Park, California 94025



November 13, 2018

Professor Yasuhiro Iye  
Chair, the Committee on the Revised ILC  
Science Council of Japan

Dear Professor Iye,

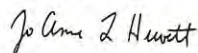
I am writing to encourage you and the Science Council of Japan to approve the International Linear Collider (ILC) as a globally funded project with Japan as the host nation. The construction of the ILC laboratory will bring benefits not only to particle physics but to the physical sciences in Japan more generally. I encourage you to endorse this opportunity and move it ahead.

I am writing to you as an associate laboratory director of the SLAC National Accelerator Laboratory in the U.S. Our laboratory, originally founded as a laboratory for particle physics, is now one of the world's leading laboratories in X-ray science. This is a broad field with applications to condensed matter physics, materials science, chemistry, biology, and medicine. The centerpiece of our program is the X-ray laser Linac Coherent Light Source (LCLS). Our next major project, currently under construction, is the LCLS-II, planned to be the world's leading coherent X-ray facility. Both of these projects are based on accelerator technology developed for electron-positron linear colliders. The LCLS-II will make use of the superconducting RF technology developed for the ILC, and incorporates the latest developments in this art created under the U.S. Department of Energy initiative for ILC cost reduction.

The interaction between particle physics and X-ray science has been extremely fruitful. Since the 1970's, accelerators constructed for particle physics have provided beams for the full variety of applications listed above. Since the 1980's, this interaction has been a two-way street, across which developments in magnet systems, beam dynamics, and X-ray detectors, and accelerator systems engineering have spurred new approaches to the construction of high-energy physics facilities. The vision of our laboratory going forward is one of mutually productive collaboration between X-ray science and particle physics.

The construction of the ILC in Japan will bring your nation a new and highly capable laboratory that will advance all fields benefitting from radiation and imaging with high-energy beams. On the basis of our experience, I strongly encourage you to lend your support to this project.

Sincerely,



JoAnne L. Hewett  
Professor of Particle Physics and Astrophysics  
Associate Lab Director for Fundamental Physics Directorate  
Chief Research Officer

