

Research Director's Report

The first IDAG meeting in Warsaw and common task groups



IDAG members at the last ILC-ECFA Workshop in Warsaw. Photo: Perrine Royole-Degieux

The first meeting of the International Detector Advisory Group (IDAG) for the ILC detectors was held in Warsaw during the ECFA Linear Collider workshop on 9 and 10 June. There were both open and closed sessions. The closed meeting became a good chance for the IDAG members to meet with each other, the Letter-of-Intent (LOI) representatives and research directorate members in order to share their views as to what their tasks are and how the validation process can be made.

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-- Sakue Yamada

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Research Director's Report

My tribute to Yoji

Arriving at DESY last Thursday, I heard the sad news of Yoji from home. This reminded me of the most enjoyable days I had in physics with him here at DESY in the Double-Arm Spectrometer (DASP) group lead by Björn Wiik and Guenter Wolf. When Prof. Masatoshi Koshihira decided to join the e^+e^- collision experiment by participating in the DASP collaboration, he first sent Yoji to DESY just before Christmas in 1972. I joined him half a year later, after my ten-month stay in Novosibirsk.

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Calendar

Feature Story

From KEK Director's Corner: Obituary: Yoji Totsuka, Former Director General of KEK



Atsuto Suzuki pays tribute to Yoji Totsuka in his Director's Corner.

Yoji Totsuka, the former director general of KEK and an outstanding contributor to great advances in neutrino physics, died of cancer at the age of 66 on Thursday, July 10.

Totsuka was one of the first-generation of students to study under Professor

Koshihira, the 2002 Nobel Prize Laureate in Physics, at the graduate school of the University of Tokyo. Upon receiving his Ph.D. degree in 1972, Totsuka began his career working on DASP, an electron-positron collider experiment in DESY, Hamburg, as a research associate of the University of Tokyo. Later he joined other experiments including JADE. In 1981, Totsuka was called back to Japan by Koshihira, to build Kamiokande, a large water Cherenkov detector. In 1988, he took over the role of Kamiokande spokesperson from Koshihira, and led the design and construction of Super-Kamiokande, which brought him and his colleagues to the discovery of atmospheric neutrino oscillations in 1998. In October 2002, he moved to KEK and worked as the director general from 2003 to 2006. He was a professor emeritus of KEK and the University of Tokyo.

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-- Atsuto Suzuki, KEK Director General

In the News

Director's Corner

A personal tribute to Yoji Totsuka

High-energy physics lost a giant in our field - and I lost a very good personal friend - when Yoji Totsuka, the former Director General of KEK, died of cancer at the age of 66 last week. I would like to pay special tribute to a great scientist and wonderful human being.



Yoji Totsuka.

Yoji Totsuka was renowned as a scientist for his ground-breaking work in neutrino physics, especially the discovery of atmospheric neutrino oscillations with the [Super-Kamiokande](#) detector. I was working on a related experiment at that time, the MACRO detector in the Grand Sasso Laboratory in Italy, where we observed possible hints of atmospheric neutrino oscillations. But it took the definitive and beautiful measurements of Yoji and his collaborators to make the [discovery](#). Yoji went on to become Director General of KEK and won many prestigious awards for his science. This made him one of the most respected particle physicists in the world.

[Read more...](#)

-- Barry Barish

[Director's Corner Archive](#)

Image of the Week

Remember this?



Yoji Totsuka, former KEK Director General, passed away last week. He played a major role in fostering the ILC project in Japan and in the world, and in November 2004 he brought the freshly formed ILC community together at KEK for the very first time. KEK has put together a photo

Upcoming meetings, conferences, workshops

[34th International Conference on High Energy Physics \(ICHEP'08\)](#)

Philadelphia, USA
29 July - 5 August 2008

[ILD meeting](#)

Cambridge, UK
11-13 September 2008

[Conference on the Design/Optimization of the Silicon Detector at the International Linear Collider](#)

University of Colorado at Boulder, Colorado, USA
17-19 September 2008

Upcoming school

[Third International Accelerator School for Linear Colliders \(2008 LC School\)](#)

Oak Brook, Illinois, USA
19-29 October 2008



= Collaboration-wide Meetings

[GDE Meetings calendar](#)

[View complete ILC calendar](#)

From *Liverpool Daily Post*
15 July 2008

£65m for 'cutting edge' research centres at Daresbury campus

Two cutting-edge science centres are to be created at the Daresbury campus after the Government announced a £65m investment.

[Read more...](#)

From *Science*

11 July 2008

U.S. BUDGET: 2008 Supplemental Helps Fermilab By Putting Jobs Before Research

High-energy physics gets \$32 million, all but a few million to be spent at Fermilab. Another \$13.5 million goes to basic energy sciences, which supports x-ray sources and other "user facilities" for materials science, structural biology, and other fields.

[Read more...](#)

From *Daily Herald*

10 July 2008

Wise move to advance research efforts

If our nation is to keep pace with the rest of the world in its technological acumen - now ever so critical with skyrocketing energy costs - it must make a heavy investment in research.

[Read more...](#)

From *CNRS international magazine*

10 July 2008

Opening up to Asia

...CNRS has now firmly set its gaze towards the East. Since 2006, three International Associated Laboratories in the field of particle physics have been created with Japan, China, and South Korea.

[Read more...](#)

album commemorating his life in physics. View [photo album](#)

Announcements

ILC Note

[2008-047](#)

Executive Summary of the Workshop on Polarisation and Beam Energy Measurements at the ILC

EUROTeV Reports

[2008-003](#)

Simulation Studies on Coupler Wakefield and RF Kicks for the International Linear Collider with MERLIN

[2008-004](#)

Simulation Study of Fast Ion Instability in the ILC Damping Ring

[2008-005](#)

Recent Experimental Studies of Fast Ion Instability in ATF Damping Ring

Research Director's Report

17 July 2008



Sakue Yamada

The first IDAG meeting in Warsaw and common task groups

The first meeting of the International Detector Advisory Group (IDAG) for the ILC detectors was held in Warsaw during the ECFA Linear Collider workshop on 9 and 10 June. There were both open and closed sessions. The closed meeting became a good chance for the IDAG members to meet with each other, the Letter-of-Intent (LOI) representatives and research directorate members in order to share their views as to what their tasks are and how the validation process can be made. On the first day Barry Barish, GDE Director, was able to join so that we could clarify the planning for the entire ILC design procedure in the discussions. During the open session, the three groups preparing for LOIs presented their concepts and plans to reach completion of LOIs. The presentations were made by one of the two representatives of each group: Ties Behnke of DESY for ILD, Harry Weerts of ANL for SiD and John Hauptmann of Iowa

State University for the 4th concept. They were followed the next day, by closed meetings with the individual groups inviting the available representatives and a few more experts. As the LOI groups are in the middle of LOI preparation, IDAG did not go into detail. It was more the LOI groups who raised questions as to what is needed for the LOIs and what will happen after they submit them. Details for the future are not fixed yet. Summarising these discussions, IDAG will make a list of additional questions which they think are important on top of the more general guidelines given by the ILCSC last October. Many IDAG members were also able to attend the entire workshop in order to get ideas on the status of R&D studies and design work.

Another fruitful meeting during the ECFA workshop was an informal get-together of all the presently known members of the common task groups and the LOI representatives with the three regional contacts and myself. Some members who could not attend the workshop joined via Webex.

The common task groups will work on common issues which will be crucial for the LOI groups. Members from all the LOI groups will collaborate across the group boundaries. The discussions in the meeting helped us make them more powerful.



IDAG members at the last ILC-ECFA Workshop in Warsaw. Photo: Perrine Royole-Degieux

Prior to this meeting there was a meeting of World Wide Study Organising Committee, where they concluded to stop many of their panels. This is because some roles of these panels overlapped with those of the new common task groups. They think that many of the roles can be transferred to the new common task groups. However, this requires some modification or extension of the tasks as the overlap is not perfect. There were discussions on how the modification be made, and it is clear that for each common task group the best possible way will be different. In principle, each group can identify the important tasks for it to elaborate. The groups can also develop when there is a consensus of the LOI groups.

For instance, much discussion was held on for the detector R&D panel, and they converged to a view that a close link to the R&D collaborations, which are independent of the LOI groups, would be very important. Actually we have been thinking of this same idea for months and it was very useful that through the discussions we found a way to realise it. We plan to ask a few more experts for the detector components, which are crucial and/or missing now, to join the group to strengthen the link. A similar need for the reinforcement of the Physics Panel was discussed. In this case, we decided to consult the regional bodies to suggest more candidates for membership. This group will study possible scenarios for different possible outcomes from the LHC. Therefore we would welcome participation of theorists.

As a result of this meeting, the next steps are being performed for the setting up of the common task groups. When all the members are known, selected conveners will join the Physics and Experiment Board to report their activities and to communicate with each other.

-- Sakue Yamada

Research Director's Report

17 July 2008



Sakue Yamada

My tribute to Yoji

Arriving at DESY last Thursday, I heard the sad news of Yoji from home. This reminded me of the most enjoyable days I had in physics with him here at DESY in the Double-Arm Spectrometer (DASP) group lead by Björn Wiik and Guenter Wolf. When Prof. Masatoshi Koshihira decided to join the e^+e^- collision experiment by participating in the DASP collaboration, he first sent Yoji to DESY just before Christmas in 1972. I joined him half a year later, after my ten-month stay in Novosibirsk. Another half a year later Teruhiro Suda, who later became one of the first members of Kamiokande group to build it, arrived and we worked for the inner detector of DASP with colleagues from the University of Hamburg and DESY. Yoji and Teruhiro constructed its proportional tube counters for tracking. When DORIS began operation in 1974, the big news of the sharp peak at 3.1 GeV came from the US. The inner detector, which was the only detector available that time, could confirm the peak in Bhabha scattering as the machine hit

the right energy. This was the start of an extremely exiting period which Yoj and I shared together with many friends at DESY. He stayed in Hamburg until he finished the construction of his part of the JADE detector. Then he went back to Tokyo to support logistics at home, which was crucial to conduct an international collaboration. This gave him a chance to do different physics at home and, maybe persuaded by Prof. Koshihira, Yoji joined Kamiokande and later resulted to lead Super-Kamiokande. Nevertheless, he kept his interest and sympathy for e^+e^- - physics. This was why he spent much effort for ILC years later when he served as the director general of KEK.

Not only the particle physics community but also cosmic ray physics and astrophysics communities lost a brilliant physicist and leader. I also lost one of the best friends from my graduate-student days. We had many experiences together since then even when we worked in somewhat different fields.

-- Sakue Yamada

Director's Corner

17 July 2008



Barry Barish

A personal tribute to Yoji Totsuka

High-energy physics lost a giant in our field - and I lost a very good personal friend - when Yoji Totsuka, the former Director General of KEK, died of cancer at the age of 66 last week. I would like to pay special tribute to a great scientist and wonderful human being.

Yoji Totsuka was renowned as a scientist for his ground-breaking work in neutrino physics, especially the discovery of atmospheric neutrino oscillations with the [Super-Kamiokande](#) detector. I was working on a related experiment at that time, the MACRO detector in the Grand Sasso Laboratory in Italy, where we observed possible hints of atmospheric neutrino oscillations. But it took the

definitive and beautiful measurements of Yoji and his collaborators to make the [discovery](#). Yoji went on to become Director General of KEK and won many prestigious awards for his science. This made him one of the most respected particle physicists in the world.

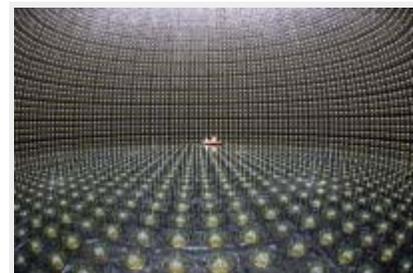
Yoji Totsuka's neutrino research was carried out on the Super-Kamiokande detector in Japan that followed up on the discoveries on the earlier Kamiokande detector. Super-K detected atmospheric muon and electron neutrinos that are created in the Earth's atmosphere due to high-energy cosmic rays interacting high in the atmosphere, producing secondary particles that yield muons and electrons. Simple kinematic arguments predict that the number of muon and electron neutrinos should be nearly equal. However, the measurements of Yoji and his collaborators showed that almost twice as many muon neutrinos as expected without oscillations were produced. This effect alone may have been explainable by alternatives to neutrino oscillations. However, Yoji and his team provided two additional pieces of convincing evidence: the ratio of interactions of upward vs. downward going neutrinos, and angular effects expected for neutrino oscillation having different path lengths in the atmosphere providing additional strong evidence for oscillations.

These results were first presented by Yoji Totsuka and collaborators at the International Conference on Neutrino Physics and Astrophysics in Takayama, Japan almost exactly ten years ago. The results were immediately heralded by the international community, because of the very convincing evidence that ruled out all known alternative interpretations. This discovery was a most impressive accomplishment by Totsuka and his collaborators and as a result he deservedly won many prestigious awards and prizes. It would not have surprised any of us if he had been awarded a Nobel Prize. The very obvious legacy of his discovery are all the projects that we now do in neutrino physics and plan for the future are a direct result of his work.

As Director General of KEK, Yoji Totsuka was a very big supporter of the Global Design Effort for the ILC. He immediately accepted the decision and took steps to convert the KEK R&D programme from warm to cold technology. In a featured [NewsLine article](#) a short time later, he said "*KEK is also working hard to establish and improve the SRF cavity technologies.*" (a statement that has proven true!). Yoji personally encouraged me to accept the job as Director of the GDE and he always went out of his way to offer his help, even after he had become ill and had stepped down as KEK DG. The last time I saw him was in Tokyo less than a year ago, when he sought me out at my hotel to learn first



Yoji Totsuka.



The Super-Kamiokande experiment in Japan.



hand of our status and, as usual, to offer his help.

Yoji Totsuka was a very special person and a great scientist. He has made great impacts on our field and he will be badly missed for his talents, wisdom and advice. As for me personally: I will always treasure having had Yoji as a colleague and a friend.

-- *Barry Barish*

Yoji Totsuka, centre rear, participating in the historic ICFA decision to base ILC design effort on superconducting rf technology.