

## Understanding something new — interview with Makoto Kobayashi

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It has been hectic days for Makoto Kobayashi, Professor emeritus at KEK, since 7 October, the announcement of 2008 Nobel Prize in physics. Now that one month has passed, Kobayashi finally gets to settle down a little (or he has gotten used to keeping up with a demanding schedule), he shared his time to talk about the future of accelerator science with ILC NewsLine.

*- First of all, congratulation for winning the Nobel Prize. Now, about one month has passed. How do you feel about this past hectic month?*

Kobayashi: Actually, I still can't believe this is happening. I feel like "Why I am doing this?" or "Is it OK for me to be doing this?"

*- Just before the announcement of the Nobel Prize, the Large Hadron Collider (LHC) started up in Geneva. What is your expectation for the LHC?*

Kobayashi: Of course, Higgs will be the first priority, but what I expect most from the LHC is finding of any evidence which would suggest physics beyond the Standard Model, for example finding a signal of the supersymmetry particles.

*- Are you working on a new theory for LHC physics?*

Kobayashi: The possible physics around the energy regime where the LHC reaches, in a sense, have been thought through already. However, if we find any evidence at LHC, the things we want to know about most, such as the mass scale of supersymmetry particles, would likely be revealed. With those findings, we can start out again the new theory such as how those new particles relate to CP violation in B meson decay.

*- What do you expect for the ILC?*

Kobayashi: Because the ILC is a dream machine for high-energy physicists, of course I expect a lot for the ILC. However, what I expect would be based on new findings from the LHC, such as the mass scale for new theory.

*- In Japan, there are many activities going on involving government and industries. What do you think of those activities?*

Kobayashi: We will definitely need those supports to realise ILC, so of course I am happy about those activities. In other words, the ILC is quite a job which cannot be done without combining all those efforts. I think the ILC community needs a strategy to do so.

*- How do you think or do you expect will your winning the Nobel Prize influence the Japanese environment surrounding physics?*

Kobayashi: I will be very happy if it can attract interest to physics or basic science in general.

*- How did you become interested in science?*

Kobayashi: I was interested in fundamental questions since I was little. I have read many books while I was in high school, and that was the starting point, I guess. Another reason would be the place I grew up, Nagoya. Professor Shoichi Sakata of Nagoya University was very popular for his studies on particle physics, and I read and heard about him a lot. I wouldn't say I felt closeness to physics, but there might be some unaware input into my mind.

*- What is the best part of being a scientist?*

Kobayashi: When you understand something you couldn't before, large or small. Sometimes, I just have an inspiration, and sometimes I keep calculating until I reach the point. Understanding something new - that is the best part of being a scientist.

*- In Japan, many students decide not to study physics in high school. This tendency can be translated that not many young people chose their occupation in physics. Do you have any comment on this?*

Kobayashi: To become a scientist or a researcher, you need to study physics or mathematics very hard through junior



Makoto Kobayashi during the interview at KEKB exhibition hall (credit: Nobuko Kobayashi)

high school to college. You need to clear those hurdles. I think many young people feel out of breath during that path. The important thing is to maintain their interest. That is why I proposed to make it more fun reading school text books.

- *Thank you very much.*

-- *Interview by Rika Takahashi*