

Next Steps after the Open Meeting

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Hyper-Kamiokande status in a nutshell

World-leading detector for nucleon decay and neutrino detection by an order of magnitude larger volume than the successful Super-K.

- Existing beam with upgrades being planned and highest priority at KEK.

PIP review close out

- PIP review concluded that “J-PARC upgrade for HK is the highest priority”.
 - It is now set as the highest priority after the completion of the new PS for MR, of which only 1/3 is funded so far.
 - While PIP priority has been set, the PAC discussion should not be bypassed.

Takashi
Kobayashi's
talk

Hyper-Kamiokande status in a nutshell

- A BIG progress in **phototube development** allowing high QE and reduced energy thresholds.
- All that leads to a project with **remarkable sensitivity** (on neutrino parameters, proton decay, supernovae low energy processes, etc...)
 - within a **realistic timescale** (starting in 2026)
- Decision for funding could be within about 2y. A few steps.
 - Currently being discussed by the Science Council of Japan
- Global project by international cooperations and participations
- Conceptual design ready → Full design with defined international responsibilities is necessary.
- **We are open to new ideas towards a full design.**

Hyper-K Info

- Web site provides the latest information on the experiment:
 - <http://www.hyperk.org/>
 - (Japanese: <http://www.hyper-k.org/>)
- Whom to contact:
 - http://www.hyperk.org/?page_id=67

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Our first goal was to identify areas of common interest.

The areas investigated this time:

- **Ideas for a new far detector in Korea (T2HKK)**
 - Presented by a combination of HK and non-HK collaborators.
 - New working group to study this possibility.
- **Several new ideas and prototypes at CERN**
 - Already successful prototype at CERN (BabyMIND)
 - TPC-based (incl. High Pressure TPC) planned work.
 - New ideas for enhanced ν_e beam from kaon tagging (ENUBET)
 - Interest from ESS-nu for collaborating w/ HK

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- **Collaborating with the phenomenologists/theorists.**
 - We started to address dark matter, the atmospheric neutrinos, but it can be extended to other areas
 - More collaboration welcome in the future
- **PMTs**
 - New PMTs
 - New ideas for different concepts (D-Egg, mPMT, WOM, L-OM, etc.)
 - New covers etc.
- **Electronics**
 - New readout chips (Omega), JUNO PMT readout electronics, NA62 readout, ANNIE DAQ...

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- **Calibration**

- Ideas from different experiments for Hyper-K are welcome

- **Intermediate detector**

- A strategy based on nuPRISM and TITUS is being developed
- New collaborators are welcome

How to move forward?

We need a strategy to build-up from the current open meeting.

Proposal:

Working group open meetings.

- If there is an interest to collaborate on a given topic we should hold some *open* working group meetings.
- They should be frequent enough to be able to develop contributions to the common topic.
- We should expand to include all the activities discussed for which there is an interest.
- The HK (i.e. not open) working meetings should continue to be held as before.

How to move forward?

- Another possible example to exchange further information is a **Memorandum of Understanding (MoU)**.

- **Example from HK and KM3Net:**

1.1. The purpose of this Memorandum of Understanding (MoU) is to facilitate:

- exchange of know-how on detector technologies;
- use of equipment;
- use and development of software;
- organisation of joint meetings;

The details of specific works to be undertaken under this umbrella MoU will be outlined in addenda approved by the two spokespersons.

1.2. Nothing in this MoU constitutes a firm commitment for any of the Parties to provide financial or other resources, including for a Collaborating Institution to provide or continue to provide a contribution to the Experiment, this question being a matter for internal decision within the Experiment.

How to move forward?

- We proposed a couple of possible options but more can be discussed, as needed.
- Generally the interactions will depend on the interest, but there could be different ways in which the discussions can develop.
- **Mostly important is to continue to be in touch if there is a common interest.**

Thank you everyone specially our
non-Hyper-K guests!